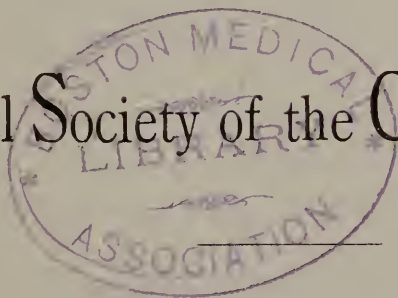


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THE
PROCEEDINGS

OF THE
Medical Society of the County of Kings.



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PROCEEDINGS

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MEDICAL SOCIETY OF THE COUNTY OF KINGS.

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No. I.

OUR DRINKING WATER.

BY N. B. SIZER, M.D.

An article in a prominent New York newspaper, which appeared last summer, entitled "Pure Water, and How to Get it," deals with a question intimately concerning the health and well-being of every one, but does not treat the subject as accurately as its importance demands.

The following statements were made explicitly or by implication, viz.:

1. Pure water is distasteful.
2. Health does not necessarily demand its use.
3. Water may contain "hardly a trace of impurity" and yet be dangerous to use.
4. It is comparatively easy to get good water in the country.
5. "Croton" water is "as pure as could be expected" and yet not always "fit to drink."

Statement No. 2 is almost entirely false; the others have a grain of truth in them, but are calculated to give wrong ideas and do much harm among those uninformed on sanitary matters.

I feel called upon, considering the importance of the subject, to beg the indulgence of this Society, while I endeavor to state what SCIENCE teaches us about drinking water.

Chemically pure water is generally to be found only in the laboratory,

as the chemist is the only one who absolutely requires it; but rain water, falling through a clean atmosphere, is very nearly pure, containing, however, substances washed out of the air, as oxygen and carbonic acid, traces of nitrates, ammonia, H. S. and sulphuric and sulphurous acids, besides dust and particles of various origin, not, however, of a nature or in quantity great enough to be usually deleterious to health.

Other kinds of water, as spring, rain, pond, lake and sea water, all contain varying proportions of these impurities, frequently sufficient to be harmful.

Oxygen may be considered as only *chemically* an impurity, being not only harmless to *man*, but also the "breathing material" for fish, without which they could not live.

Carbonic acid is inert, as regards ingestion, and gives the brisk, sparkling appearance to spring water and to the falsely so-called "Soda water." Although it is innocuous *per se*, its presence in potable water is always to be regretted, since its presence in a stream flowing over a limestone country enables the water to dissolve a large amount of salines otherwise comparatively insoluble.

It is found by experiment that *pure* water is able to dissolve only 7 or 8 grains of carbonates per gallon, but that the presence of CO_2 enables the same amount of water to hold in solution over 250 grains of these salts.

"Hard" water is pure water containing certain dissolved salines, *not* useful as food to a healthy man, injurious to the health if persisted in, and, so far as we know, useful, medicinally, only when the health is deranged.

Certain it is that no *sane* man would think of adding "Epsom," "Glauber," or "Rochelle" salts to his tea or coffee to "improve its flavor," and yet this is practically what all do who use "hard" water, these *hard* waters being merely weak solutions of various sulphates and carbonates.

Pure water exposed to a clean mountain air in a desert country, away from human contamination, lying in a granitic or other insoluble basin, makes the most grateful of beverages, carbonic acid, if it be present, adding a peculiar freshness to its taste.

There can be no doubt that health *does* "demand pure water," and that a water not appreciably "pure," in a *chemical* sense, is unfit *hygienically* for use.

This is easily understood when we estimate the amount of these impurities are taken per day. The Thames water, containing say 20 to 25 grains per gallon of carbonates and sulphates, would compel each adult using two quarts daily to swallow 10 to 12 grains of salines, whose average

medicinal dose may be stated at 4 to 5 grains, thus getting a fair dose three times a day. Many wells contain 50 to 60 grains per gallon of alkaline carbonates, and it would be easy to compute in the same way the dose a thirsty soul would take during our sultry August days.

As a matter of course, persons accustomed to pure water are apt to suffer from diarrhoea or some enteric difficulty on being compelled to use these saline waters; but as in the case of tobacco, opium, whisky, or any other poison, use breeds tolerance.

If we consider for a moment the function subserved in our economy by the water we drink, we shall see very forcibly why hard water does us harm. Leaving out of the account the water lost by transpiration through the lungs and skin, we may state, in a general way, that the use of water is to *wash the blood clean*—that is, to dissolve and carry out of the blood the waste materials picked up by the blood, which are *soluble* in water. Now, we all know that a liquid can only dissolve a *certain proportion* of any solid; therefore, if we partly destroy the solvent properties of our potable water by *previously* putting into it from 10 to 50 grains per gallon of various salines, it is easy to see that we destroy its power of dissolving and removing from the blood anything like the proper amount of waste material, and that, if it be thus overloaded with dissolved salines, the water will be very apt, like an exhausted laborer, to *drop part of its load* the first chance it gets.

These deposits occur in very important and delicate organs—notably the kidney, ureter, and bladder, forming the diseases so common in limewater districts—“*gravel*” and “*stone in the bladder*,” or “*urinary calculus*.”

Another but almost as important point is the effect produced by the alkaline nature of most hard water.

The reaction of the urine *in health* is *acid*, and, in many diseases, *alkaline*—the alkalinity being also easily produced by taking alkaline medicines, “hard” water also producing this effect.

Accordingly we find that, in seasons when the London water is particularly hard, many physicians find it necessary to put patients suffering from digestive, intestinal, and renal diseases upon *distilled water* as a drink, exclusively, and with the happiest effects.

Reverting to the subject of calculous diseases, we shall find that a geological map of Great Britain shows beds of chalk and allied carbonates extending along the eastern coast, running as far north as Scotland. This fact explains why we read in Holmes’ “System of Surgery” (perhaps the best text-book on the subject in the world), the remark that “Calculous disorders are extremely prevalent along the eastern coast of this country, and are found as far north as Scotland”—that is, wherever the soil is full

of carbonates of soda and lime, the water will dissolve it, become "hard," and produce calculi in the inhabitants. There is reason to believe that other diseases are influenced by the use of calcareous water, as seen in the "Crétins" in Switzerland, and the prevalence of goitre in Derbyshire, a county notorious for water contaminated by earthy salts.

In the "Report of the London Board of Health on the Water Supply," 1850, it is remarked that, "since the supply of soft water to this city, urinary and dyspeptic complaints are less frequent, continued fevers *more seldom and less severe*." (This includes typhoid, typhus, and relapsing fevers, of course.)

Dr. Paton, of Paisley, Scotland, has noticed that since the introduction of soft water into that town (which formerly depended upon calcareous wells), calculous disorders are very rare, while formerly they were very numerous. He has also noticed that in the two cholera epidemics those families using well-water were far more severely afflicted than those supplied with the city water, very pure and soft. One very instructive case he notes: Cholera broke out in a suburb, built high and dry on a limestone ridge, the air pure and bracing, drainage excellent, but the water mostly derived from wells sunk in the rock. Few persons here escaped cholera, except a family here and there who had no well, but depended upon the city supply.

After the epidemic at Paisley had subsided, it was found that there had been 848 cases of cholera, and it was estimated that the district supplied by wells contained only about $\frac{1}{10}$ of all the inhabitants of the town, the other $\frac{9}{10}$ of the people using city water. It was found that this $\frac{1}{10}$ that used well-water had no less than 502 cholera cases among them, while the other $\frac{9}{10}$, who used pure water, had only 346 cases—that is, taking the average rate of illness amongst the $\frac{9}{10}$ of the people of Paisley, the $\frac{1}{10}$ should have had only 39 cases instead of 502, which they *did* have, apparently from using hard water alone.

All large consumers of water find hardness to be a nuisance in many trades, especially to those using steam, the reason being that hard water is largely contaminated with carbonates and sulphates, the former held in solution by carbonic acid, the latter by the water itself. When the water is vaporized the CO_2 is driven off by the heat, and the water at once becomes turbid by the separation and deposition of the carbonates, which settle as "scale" on the boiler and flues. As soon as the water becomes somewhat concentrated by continuous vaporization, the sulphates begin to add to the deposit by slowly separating out and falling to the lowest part of the boiler. These compound deposits, known to all housewives as "fur in the tea-kettle," and to engineers as "scale," are not only a source of expense, from being non-conductors of heat, but at times prove

dangerous, from suddenly cracking and allowing the water to come into contact with red-hot metal, resulting in a rapid evolution of steam, or sometimes in an explosion. In many parts of the country this fact compels steam users to employ apparatus specially constructed to purify the water prior to using it in the boiler.

All trades using much soap are also sensibly inconvenienced by calcareous water, as not only must about twice the usual amount of soap be used, but a considerable quantity of soda in addition, to soften the water. The cost of *hard* water to London, in excess of what *soft* water would cost, is well shown as follows:

London uses about 1,000 tons of soap per month—that is, 12,000 tons per annum—worth, roughly, about \$250 a ton; that is, \$3,000,000 per annum paid for soap only. Now, half of this soap is wasted, for it would not be used if the water was soft—say \$1,500,000 wasted on soap every year!

It is estimated that 250 tons of bicarbonate of soda are used per month in London for softening the water; this, at \$60 per ton, is \$15,000 per month, and \$180,000 per year; adding cost of soap and soda, we have *one million six hundred and eighty thousand dollars* wasted per year, only as payment for the folly of using hard water. Let us now compare a few figures, showing analyses of different waters. London (bad river water), Rhine, at Bäle (good river water). Hard well (Trafalgar Square, London):

GOOD CITY WATER.

(GLASGOW, LOCH KATRINE, CROTON, N. Y., AND RIDGEWOOD, BROOKLYN).

MINERALS.	THAMES.	RHINE.	HARD WELL.	GLASGOW.	NEW YORK.	BROOKLYN.
Lime,	83.8	55.5	18.8	1.9	Av. 3 mo. 1868.	Av. 3 mo. 1868
Magnesia, . . .	4.7	4.8	9.1	0.8	Inorganic Matter.	Inorganic Matter. †
Soda,	9.2	0.6	265.3	—	.96	64.4
Potash,	4.2	—	99.0	—		
Carbonic Ac.	119.9	86.2	197.0	1.7		
Sulphuric Ac.	31.4	15.4	180.5	5.6		
Nitric Ac. . . .	—	—	—			
Organic Mat'r	49.7	3.3	13.0	vegetable only 11.4	28.1	11.8

The figures are parts per million by weight.

Five minutes occupied in studying this table will be well spent, as the figures are from the highest authority, and guaranteed correct; any one unfamiliar with the subject, may get a better idea of what makes water good or bad by looking over the table than reading a large book.

The article in the paper which I have criticised has been very properly strenuous, as regards *organic* contamination, which, beyond all question, is the most dangerous of all impurity.

Too much stress cannot be laid on this point, as many valuable lives have been lost to the world through this insidious poison.

Organic materials find their way into water from various sources, any decomposing animal or vegetable substances being a convenient point of origin, such as dead bodies of animals, or drainage from cemeteries, leakage of sewage or sewer gas, soakage into wells, or water courses from heavily manured fields, barn-yards, pig-sties or *any other* focus of decomposition.

A few examples will illustrate this fact. During the two cholera epidemics of London, it was found that two water companies, the "*Lambeth*" and the "*Southwark*," had laid their mains side by side through many streets, thus supplying water to the same neighborhoods all over London.

Some people took of one company, some of the other, to the amount of 500,000 individuals, who were as evenly as possible divided amongst the two companies, being in the same condition elsewhere, as regards cleanliness, social status and respectability. It was discovered, however, that those supplied by the "*Lambeth*" company died at the rate of 37 per 10,000, while the "*Southwark*" people died at rate of 130 per 10,000. It was at once suspected that the different mortality was probably influenced by some difference in the nature of the waters, and on examination it was discovered that while the "*Lambeth*" company went *high up* the Thames for its supply, far above city sewage or tidal contamination, the "*Southwark*" company pumped its water at Chelsea, a point near large sewers and seriously affected by tidal changes.

The river at Calcutta is intolerably foul, being contaminated not only by many thousand dead animals cast yearly into its stream, but also with 15,000 human corpses every year. Besides all this, the contiguous population add their quota in the shape of some *forty tons daily* of various excreta !

Calcutta is now (since five or six years) tolerably well supplied by filtered water, taken out some 15 miles up the river by pipes and reservoirs, but, even when the city is healthy, a very severe type of sporadic cholera and dysentery is seen to prevail on board ships lying in the Hooghly, due simply to the fact that the water used is drawn up the ship's side in a bucket, and, of course, foul with organic detritus.

The facts are almost identically the same at the port of Shanghai.

In the year 1859 severe enteric fever prevailed at Bristol, England, and was easily traced to contamination of the wells by sewage and soil soakage.

This is the curse of many a lovely country town where the farmers have such a fatal fondness for grouping barn-yards, pig-sties, and all sorts of unmentionable nuisances in as close proximity to the *house and well as possible!* The result is, that in this country typhoid fever is *far more* a rural than an *urban* disease, especially in New England. This is the reason why I object to admitting that good water is "much easier had in the country than the city," for, as things are, I would much rather drink an *unknown city* water than an unknown specimen from the *country*.

These enteric fevers betray some curious facts. For example, in October, 1847, the inmates of 13 houses, scattered in various parts of a short street in Clifton, England, suddenly went down with typhoid, and no cause was suspected until it was *accidentally found* that these 13 houses were supplied with water from one well—the other 21 houses, *all well*, took water elsewhere!

The suspected well was analyzed, and found foul with sewage; the water supply was changed, and most of the sick recovered.—*Lancet*, 1859, p. 432.

Milk, *watered* from a foul well, has *repeatedly* been known to produce epidemics of enteric fever.

In Holland, during the first ten years of the century, the English expeditions suffered great loss from the so-called "*Walcheren fever*." The country was a vast stinking mud-bank at low tide, and the forces on shore died by *hundreds*, while the men-of-war, lying in the rivers and exposed to all the foul *air*, carried their crews in high health! Why? The ships had water-casks filled in England; the land troops had to drink the marsh water, and died rapidly.—Davis on "*Walcheren Fever*," 1810, p. 15.

There is no reason why, in a *civilized* country, safe drinking water cannot be found for human beings; the fact that so many risks are run is only another example of the old adage, "*Populus vult decipere*."

The public never wakes up to any great sanitary or moral purpose until either life or property is overwhelmed by some cataclysm. When people are *compelled* to understand the necessity of hygiene by epidemics of the enteric fevers, diphtheria, croup, scarlatina, small-pox, etc., there will be found no difficulty in providing a remedy.

Until the "good time comes," let us try to formulate our knowledge as follows:

1. No water unfit for *washing in* is fit to *drink*.

2. All *soft* water possessing a visible color, taste or odor is *probably* unsafe, but can be made potable by bringing it up to 100° C. (212° F.) and keeping it there for five minutes.

3. Rain water is the easiest accessible source of soft water; when caught in a proper cistern, from a clean roof, especially during the last half of a long rain, when both air and roof have been washed clean, it makes a very clear and sparkling water, and is always better after filtering through charcoal, being then *healthful*.

4. Hard waters are apt to act as a cathartic on those used to pure water, because they are generally dilute saline sol., such as we use for that purpose, medicinally.

5. Organic impurity is often the source of very fatal epidemics, and is by many believed to be one of the great sources of contagion in typhoid fever and cholera.

Remember, that three-tenth grains of organic matter per gallon, 1-2000 of one per cent.) has been known to do harm.

A tolerably accurate test, and useful if organic matter is suspected, is as follows:

Sol. A.—Take 200 Ccm. water, add two or three drops hydrogen sulphate.

Sol. B.—Prepare a solution of permanganate of potassium of the strength of thirty-two centigrams per litre of distilled water. Thoroughly mix *three* drops of Sol. B in Sol. A and note time. If Sol. A is *bleached* in *less* than *ten minutes*, organic matter is probably present in sufficient quantity to do harm.

DISCUSSION ON THE SO-CALLED VIRUS OF THE CHANCROID.

DR. STURGIS, of New York, gave a rapid review of the history of the development of our modern ideas of syphilis. He spoke of the time when the three venereal diseases were all supposed to be different manifestations of the same poison operating in the bodies of men, and so modified by circumstances as to give different phenomena in different subjects.

The efforts of noted physicians to obtain a correct idea of the nature of the disease were alluded to, and the lecturer called the attention of the Society to the fact that great minds had almost hit upon the truth, though it eluded their grasp.

A notable example of this was John Hunter.

The first important step was taken when Ricord announced the non-identity of gonorrhoea and syphilis. This discovery was followed up by his pupils, Bassereau and Fournier, the former of whom, by his researches, and particularly by his system of "*confrontation*," succeeded in proving that the venereal ulcers were of two varieties.

"Syphilitic chancre" or hard sore was invariably derived from a person who had borne a similar sore which had been followed by constitutional syphilis, while the "simple chancre," or soft sore, was shown to be the result of inoculation from one of like nature.

He likewise demonstrated that the syphilitic sore was not auto-inoculable, whereas the secretion of the simple chancre, or chancroid, if inoculated upon the person of its bearer, was followed by the appearance of a similar ulcer, and this by successive crops, each inoculation having a fainter effect till the susceptibility gradually wore out.

The next question to determine was, whether there were two varieties of the same poison, as certain experimenters found that the syphilitic chancre, if irritated, became auto-inoculable.

To determine this point, Pick, under the auspices of Prof. Zeissl, inoculated syphilitic subjects with the pus from acne, scabies, etc., and obtained pustules resembling those from whence the pus was taken. With non-syphilitic subjects the results were negative. It would seem, then, that a certain constitutional condition was necessary, in order that the inoculation should be successful. To determine whether this constitutional condition were necessarily syphilitic, a very interesting and important series of observations were made some years ago by Dr. Ed. Wigglesworth, of Boston, Mass. They were conducted in Vienna, when Dr. Wigglesworth was studying with Prof. Zeissl.

These observations were not printed at the time, but have been published in the latest edition of Bumstead's work on Venereal Diseases. Dr. Wigglesworth supposed himself, at the time, to be entirely free from all inherited or acquired disease, and had never been afflicted with sores of any kind on his skin or mucous membranes.

He was slightly run down from overwork in the hospital. He inoculated his forearm three times with pus from an acne pustule on his own person. It was followed, after three days, by three pustules. Two other successive inoculations were followed by similar pustules, but the action decreased in vigor.

A large number of the previous observations had been made upon debilitated subjects—some suffering from febrile and other diseases.

The conclusion drawn by the lecturer from these observations is, that there is no specific virus belonging to the so-called chancroid.

He thought the term *virus* should be limited to a poison which affected the constitution so as to produce certain definite changes in the nutrition of the body. The introduction of it into the system was always followed by definite results, which could be produced by no other means.

While the appearances of chancroid are, perhaps, characteristic and peculiar to itself, they are entirely local. Even these local results do not always follow the application of this poison to certain surfaces in a healthy subject. The local results of inoculation faded out after repetition, as is observed in the case of non-specific diseases. Again, this disease, however characteristic it may be, can be closely imitated by applying pus from an irritated sore to an abraded surface on any debilitated subject; for instance, a patient weakened by syphilis, typhoid fever, or other condition of impaired vitality.

In conclusion, he said it would appear, from a careful review of the question, that modern syphilographers would have to change their views in regard to the pathology of syphilis. He was himself engaged on some experiments in the Charity Hospital, which he would bring before the profession at a later date.

DR. STURGIS said he had laid this subject before the Society because he believed it would be the next subject which would come before those interested in venereal

for discussion. Several writers have already called attention to the necessity of revising our belief in this respect. Not many years ago it was believed that gonorrhœa had a virus of its own, and many of the older practitioners to this day speak of the virus of gonorrhœa. That theory is now abandoned, and it is admitted that gonorrhœa is inoculable merely by inflammation. Now we believe the same to be true in regard to the pus of chancroid, and that the pus of the chancroid during its inflammatory stage is active. It is at that stage when we produce inoculation. If we take pus from a non-specific skin affection while in a state of irritation, we are able to obtain pustules of inoculation, and it is auto-inoculable for several generations, but becomes less and less so the further it is removed from the source of the original matter.

DR. J. S. WIGHT said he did not hold, so far as he was informed upon this subject, the same views precisely as those propounded by the essayist. He comprehended that surgeons nowadays really ought to understand in the most definite manner possible the doctrine which was propounded by Sir Astly Cooper, that irritation in some form or another is at the bottom of all our pathology; and that the further we go back towards that broader, simpler and perhaps wiser generalization, the nearer will we get to the understanding of the subject. So that he might, as a beginner, direct attention to irritation; and then the question arises instantly, what is it that is irritating? and then, after we have asked and answered these questions, we ask what the irritation is? It is not inflammation: that is not the irritation. The inflammation is the result, the sequence and the product of the irritation. And then we must go back a little farther and say that it is a question of sepsis. By that we reach the question of syphilis in all its forms, by which he included gonorrhœa, and then he came to ask if there be any specific condition or operation by which this is made manifest? You will see in small-pox a certain kind of sepsis; nobody will doubt that, or that it is the same in any of the specific fevers. He comprehended that nobody doubts that there is a specific poison in hard chancre. There is here a specific virus. Some deny it. We do not know at present what that poison is. It may be a specific pus cell that irritates some other cell, or there may be bacteria that cause the irritation; but the question is at present unsettled, and in that way he endeavors to approach the subject, and still he may be undecided as to the possible specific nature or the essential nature of this cause of irritation in the chancroidal sore. It is perhaps an enigma as yet, but as to what shall be decided upon after mature investigation he hardly knew. He had been puzzled a little lately by a peculiar case which, if not trespassing too much upon the time of the Society, he would briefly refer to. Some fifteen years ago a man, who is now thirty-six years of age, had undoubtedly a venereal sore, with all the significant symptoms and eruption. On last November he came to the doctor with swelled tibia and pericranial pains. He could not sleep, so great were the pains. He was at once put upon large doses of the iodide of potassium; then the iodide was alternated with bi-chloride of mercury. He improved very much and rapidly. On the 28th December he had connection, and after that, about sixteen days, there came a sore nearly one inch by one quarter of an inch in size, a suppurating sore on the prepuce, which was treated with the ordinary tonics and local applications of carbolic acid, and in three weeks time it came almost to a cure. The speaker confessed that he hardly knew whether it was a syphilitic sore or what it was. He did not pretend to know. But this much he knew: that the power of production of an ordinary venereal sore will run out. That a patient will have venereal disease a second time; but whether that be a modified form or something like a chancroidal disease, he is unable to say. He, however, was sure of one thing: that the ordinary virus that we get, or the ordinary pus, or the irri-

tation in the ordinary pus, of surgical wounds or injuries connected with a great variety of affections, I am sure that in these cases we find that such pus will produce an irritation in broken down constitutions which will last an indefinite period. But a strong individual, neither debilitated nor diseased, will resist the action of that irritation. In the former case he had no doubt but that that irritation is due to some low organic form that has originated in some part of the body and has been transported to the point of irritation. He was in hopes that some microscopist would some day discover the underlying first cause. That is the thing which in a given case is the irritant, the antecedent of the inflammation and the ulceration.

DR. B. F. WESTBROOK thought with his friend, Prof. Wight, that this question resolved itself into one of irritation; but the difficulty is to find out the nature of the irritation. He cited a case which was interesting as bearing upon the question of the auto-inoculability of non-syphilitic pus. Some few years ago, he being in poor health by reason of overwork, and hospital service especially, and without any inherited or acquired taint, he accidentally introduced some irritating matter under the nail of the index finger while making an autopsy. There was a slight suppuration, perhaps to the amount of one minim. He inoculated himself upon the dorsal surface of the same arm about three (3) inches above the wrist with some of the pus from the small abscess. The inoculation was followed by a small pustule. The experiment was not repeated, and the pustule dried up after a few days. He had no reason to suppose that the suppuration under the nail was anything more than simple suppuration due to the irritant matter introduced at the time of making the autopsy. Mr. Jonathan Hutchins has laid great stress upon the fact that any kind of pus, being inoculated upon a fresh surface, will produce a suppuration similar to that which prevailed at the point from which the original pus was taken—and that of course is acknowledged. The question then would be whether the secondary suppurations of chancroid be not produced in this way irrespective of any special poison resident in the original sore. This would seem to be sustained by the cases related of inoculation by the pus of ecthryna, etc. The fact that specific viruses rather tend to increase in virulence might rather militate against the theory that the chancroidal irritant was anything more than a result of a simple inflammation. It seems to die out by cultivation; whereas, these viruses which are specific as of small-pox, pyæmia or anthrax seem to increase in virulence by cultivation, or at any rate to lose none of their virulence. That is a point which has not been investigated sufficiently. Whether the different directions in which these different degrees of virulence proceed have a bearing upon the subject, would seem to be a question of sufficient interest to invite further investigation.

DR. G. H. ATKINSON said that the subject under consideration had been of great interest to him, and necessarily so, as he has had something to do with it in the way of teaching. He paid a high tribute to the essay, and characterized it as a great step in advancing the pathology of venereal disease, and will have the effect of clearing the literature of venereal disease of a vast amount of obscurity. Dr. Sturgis has taken the proper position to refute these errors. That taken by previous writers has been to start with the assumption, and endeavor to draw deductions from observation to correspond, to controvert previous deductions or the result of previous observations. The doctor has carefully taken these observations from the classical writers, sifted them, and drawn his conclusions. Dr. Atkinson has for some time treated chancroid practically as a local disease of inflammatory character and origin. After reviewing the history of syphilis and kindred diseases, he considered several interesting points. How syphilis was produced is not known. It appeared at a certain period and has been propagated from that time to this, and it seems to be just as active now as then. Now he is

not prepared to say that we are not to-day developing new specific diseases. There may be an irritation or a combination of irritations which may develop poison which is capable of propagating itself from generation to generation. We have an illustration of that in yellow fever, which is endemic in certain localities and epidemic and contagious in others. So he thought there might be a certain kind of gonorrhœa, for instance, which may produce its own kind for a certain number of generations. He did not believe that this disease (chancroid) is like syphilis. If there is any peculiarity in the virus of chancroid, where is it developed and under what circumstances (assuming that we have a true chancroid virus), whether its existence is temporary for a few generations or indefinite, there must be some particular locality for the development of this poison. It has occurred to him that the irritant secretions of the glands in the neighborhood of the glans penis underneath the foreskin, have the power of developing the poison, or this is the soil for the propagation of the poison, which is there introduced into the system in its most violent and characteristic form. One practical point had suggested itself to him during the reading of the paper, namely, the habit of beginning constitutional treatment (*viz.*, mercurial) for local sores. He did not care whether syphilitic or non-syphilitic, there is a bad habit brought down from classic times, of beginning the treatment of local venereal diseases with constitution remedies. If the patient has syphilis, there is a power in mercuries to postpone the symptoms indefinitely, whereas if we wait until the disease goes through its local phase, we are able to determine which is local, requiring only a local remedy, and which is constitutional, requiring treatment covering a period of months and years.

DR. STURGIS, in concluding the debate, said that one of the points which he wished to make was, that by the term virus, we are to understand something which infects the constitution and which is constitutional; but since this term has been applied to many varieties of ulceration which did not infect the constitution, an uncertainty exists as to the true meaning of the term. Now we find that the initial lesion is capable by irritation of being inoculated upon a person who has had syphilis, producing a sore in many respects resembling a chancroid, and this is a strong argument in support of the chancroid being the product of irritation. In regard to the question of the properties of pus, undoubtedly some kinds are inoculable and some are not. Laudable pus is not. It must undergo a change before it becomes inoculable. What is the result? We get at once a sore, an ulceration. The greater the amount of inflammation the greater the abundance of the cells. If we retain the term virus as something which produces a local irritation and a destruction of parts, then he did not see how we could properly exclude nitric acid, which produces destruction, from having a virus of its own or peculiar to itself. That is a logical conclusion, because here is a substance which produces an irritation and a destruction of the parts; and which is true of acids is true of the chancroidal matter. Acid is merely destructive because it is an irritant. We claim the same for chancroidal pus and nothing else. He thought Dr. Wight's case was one of chancroid.

DR. WIGHT asked Dr. Sturgis several questions. 1st. As to whether he regarded this unknown quantity as a chemical irritant, or whether it is a germinal matter which will propagate itself? 2d. As to the long period which the disease in the case related by him took to develop itself—16 full days—he was under the impression that generally a shorter period was required. 3d. He believed that this syphilitic poison may run out the same as small-pox, and that the individual may have it again in a modified form. He would like to have the doctor's views upon this point also.

DR. STURGIS believed the unknown quantity to be an irritant; an inflammation that produces an irritation. It is purely a local irritation which corrodes the tissues and

destroys them. With regard to the long period of incubation in the case referred to, it is certainly curious and remarkable. The great majority of cases of chancroid occur within four days after the infection; yet cases do occur in which the matter is deposited in the follicles and folds of the glands and resists the irritant action, and after awhile irritation is set up little by little until finally the inflammation is in full bloom. The long incubation is accounted for on perfectly natural grounds. As to the third question, it is possible to have a second attack. There are a few instances of the kind on record.

THE MEDICAL SOCIETY OF THE COUNTY OF KINGS.

A regular meeting of the Medical Society of the County of Kings was held at 398 Fulton Street, on Tuesday, February 21st, 1882. The President, Dr. Jewett, in the Chair, Dr. Wyckoff, Secretary.

The minutes of the last meeting were read and approved.

MEMBERSHIP.—The following propositions were made: By Dr. Jewett, Drs. C. S. Allaben, No. 525 Lafayette Avenue, and J. C. Lester, No. 122 Second Place; by Dr. Skene, Wm. M. Thallon, No. 816 St. Marks Avenue; by Dr. Hopkins, C. H. Williamson, No. 536 Lewis Avenue; by Dr. Russell, Francis A. Schlitz, No. 318 S. Fifth Street, E. D.

THE COUNCIL reported favorably on the following duly nominated candidates:

Mary S. Williams, M.D., Women's Med. Coll., N. Y. Inf., 188c; E. J. Chapin Minard, M.D., Women's Med. Coll., Phila., 1866; J. W. Sherfy, M.D., L. I. C. H., 1861; Wm. E. Spencer, M.D., L. I. C. H., 1881; A. H. P. Leuf, M.D., L. I. C. H., 1881; Thos. C. Giroux, M.D., N. Y. Univer., 1869; Fred. A. Baldwin, M.D., Bell. H. M. C., 1881; H. A. Bunker, M.D., Ohio M. C., 1876; Preston Sheldon, M.D., Coll. P. and S., N. Y., 1877.

THE PRESIDENT declared the following to be members elect: Drs. Wm. J. Cruikshank; Daniel K. Drake, W. J. Brandt, Wm. B. Mathewson and Alex. F. Horton.

THE CHAIR then introduced Dr. F. R. Sturgis, President of the Medical Society of the County of New York, who read a paper entitled "A Critique upon the So-called Virus of Chancroid." It was debated by Drs. Wight, Westbrook, Atkinson, and the author of the essay; after which the thanks of the Society were tendered to him.

DR. WIGHT being called upon for a report in behalf of the delegates to the State Medical Society, said he was not prepared to make a special report. The papers read were admirable. The matter which interested him most was the question in regard to the amended Code of Ethics. He did not feel entirely satisfied with the action taken. It now permits all the better members of the profession to do what some of the other members did before. Some of them consulted with irregular practitioners previous to the passage of this code. He certainly in that sense was opposed to it. He was in favor of the substitute of Dr. Roosa, which put the whole question just where it should be—upon the honor of a gentleman and the dignity of a physician. It put it upon that broader, wider, more conclusive code which all gentlemen are bound to obey, and then there would be no trouble whatever. It is useless to make a code for men who have no honor. Men who have honor do not need one, except the broad code proposed. It did not cement men to any "path" except the path of rectitude.

The report of Committee on Registration was read by the Secretary and ordered on file.

LIBRARY COMMITTEE.—On motion of Dr. Wyckoff, committee was continued and the chair empowered to appoint. He therefore announced the Committee as follows: Dr. Read, Chairman; Drs. French, Campbell, Hunt, E. A. Lewis, Hutchins, Matheson, Pendleton, West, Richardson, Rockwell, Russell and H. F. Williams.

The election of delegates to the State Medical Society to fill two vacancies caused by the promotion of Drs. Rushmore and Rockwell to permanent membership, was, on motion, laid over until the next annual meeting.

THE CHAIR announced the Standing Committees for 1882 as follows: On Hygiene, Drs. B. F. Westbrook, N. B. Sizer and D. E. Chace; on Therapeutics and Clinical Medicine, Drs. J. A. McCorkle, A. Hutchins, E. H. Bartley, A. R. Paine and A. R. Matheson; on Obstetrics, Drs. A. S. Clarke, E. Palmer, W. Wallace, J. R. Vanderveer and B. A. Segur; on Surgery, Drs. J. D. Rushmore, J. S. Wight, G. R. Fowler, A. J. C. Skene and P. L. Schenck; on Registration, Drs. J. A. Jenkins, A. S. Clarke, W. G. Russell, Z. T. Emery, F. W. Rockwell and A. Haslett; on Physicians' Mutual Aid Association, Drs. W. W. Reese, N. W. Leighton, A. Hutchins, B. A. Segur, J. A. Jenkins, R. M. Buell, A. L. Bartlett, S. H. Olmstead and A. W. Catlin; Delegate to the Medical Society of the County of Queens, Dr. J. H. Hunt.

THE CHAIR stated that at the next meeting of the Society Mr. C. F. Wingate, Sanitary Engineer, would read a paper entitled "The Physician and Household Sanitation," and requested members to be prepared to debate the question.

Adjourned.

Ἀσκληπιὸς



ὁ Σωτήρ

Χάρμα μέγ' ἀνθρώποισι, κακῶν θελκτῆρ' οὐδυναῶν.

Hymn of Homer, No. XVI.

PROLIFERATIONS.

—THE PROCEEDINGS begins its seventh year of publication with the absence of all advertisements from its pages. The Society at the late Annual Meeting agreed to defray the expenses of publication for the current year, by making good certain appropriations that had been voted in previous years, and which had not been called for. The principal labor and anxiety of the Publication Committee have thus been removed. The resources of the Committee are restricted, and certain economies will need to be practiced. In view of the liberality of the Society, and to avoid all possible adverse criticism, the Council has thought wise not to

issue the usual circular asking for subscriptions, but it will be seen that volunteer (the usual annual) subscriptions of \$2.00, from any who are disposed to lighten the labors of the Committee in this way, will not come amiss, and such subscriptions will be duly acknowledged in the PROCEEDINGS.

—WE ARE GLAD to announce that the *Scientific American* came out of the late fire in New York, like the fabled Phoenix, with renewed life. The new *Scientific American* offices are located at 261 Broadway, corner of Warren Street.

—CORRECTION.—A notice of the new *Journal of Psychiatry and Neurology*, in the February No. of the PROCEEDINGS, was so worded as to indicate that the *Journal of Nervous and Mental Diseases*, published by the Putnams, had been discontinued. The statement was unintentional and incorrect. There is a new editor-in-chief, but there is to be no break in its publication.

—DR. THEODORE L. MASON died February 12th, at the ripe age of 79 years. For nearly fifty years his strong will and energy have stamped their influence upon the medical institutions of Kings County. The Long Island College Hospital had, until quite recently, been counseled and guided by him. The establishment of the Inebriate Asylum at Fort Hamilton was, in great measure, due to his efforts. He was President of this Society in 1842-3. We hope to present in our next issue a fuller narrative of his life and works.

—MR. CHAS. F. WINGATE, of this city, Consulting Sanitary Engineer, will read a paper at the March meeting of the Society, entitled "Physicians and Household Sanitation." The paper will relate especially to the defects in house-drainage, a knowledge of which is indispensable to physicians, for the protection of their patients. The evening will be devoted to the subject, and members are requested to be prepared to contribute their views and experience in the whole matter of household sanitation.

—CEREBRO-SPINAL MENINGITIS having recently occurred in a certain section of the city, three of the houses wherein children had died were examined, with the following results: No. 1, three families. The traps of four sinks joined to iron waste-pipe by cement, so that sewer-gas readily entered apartments; the traps also admitted sewer-gas, being unsealed by use. There was a large opening at the junction of waste-pipe and sewer-pipe in cellar. No. 2, two families. Four sinks, one above the other, siphoned alternately on use, so that gas found ready entrance. No. 3, tenement house. Four sinks untrapped, and five holes were found in the main pipe in cellar.

—THE REGULAR MONTHLY MEETINGS of the Medical Society of the County of Kings are held at 8 P.M. on the third Tuesday of each month, at Everett Hall, 398 Fulton Street.

The March meeting will be held on the 21st, at which the following paper will be presented :

Physicians and Household Sanitation, by Mr. Chas. F. Wingate, Consulting Sanitary Engineer.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

OFFICERS AND COMMITTEES FOR 1882.

<i>President</i>	C. JEWETT, M.D., 307 Gates Ave.
<i>Vice-President</i>	G. G. HOPKINS, M.D., 375 Grand Ave.
<i>Secretary</i>	R. M. WYCKOFF, M.D., 532 Clinton Ave.
<i>Assistant-Secretary</i>	W. G. RUSSELL, M.D., 165 So. 9th St., E. D.
<i>Treasurer</i>	J. R. VANDERVEER, M.D., 301 Carlton Ave.
<i>Librarian</i>	T. R. FRENCH, M.D., 469 Clinton Ave.

CENSORS.

B. A. Segur, M.D., 281 Henry St.	R. F. Westbrook, M.D., 174 Clinton St.
A. Hutchins, M.D., 796 De Kalb Ave.	A. R. Paine, M.D., 485 Clinton Ave.
J. D. Rushmore, M.D., 129 Montague St.	

DELEGATES TO THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

(1878 to 1882.)

Drs. J. C. Shaw, C. Jewett, T. R. French,	Drs. G. G. Hopkins, J. A. McCorkle, A. Sherwell, J. H. Hunt.	Drs. J. Byrne, B. F. Westbrook, G. W. Baker,
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Chap. XI., Art. 2, of By-laws: "Any Member elected as Delegate to the Medical Society of the State of New York, who shall be unable to act as Delegate during two successive years, shall be considered to have vacated his position as Delegate."

DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION,

ST. PAUL, MINN., TUESDAY, JUNE 6TH, 1882.

Drs. J. S. Andrews, S. G. Armor, G. W. Baker, H. L. Bartlett, John Byrne, A. W. Catlin, Alex. S. Clarke, L. C. Gray, Alex. Hutchins, J. C. Hutchison, E. A. Lewis, W. H. Martin, A. R. Matheson, A. Mathewson, J. B. Mattison, J. A. McCorkle, Andrew Otterson, A. R. Paine, Ernest Palmer, J. S. Prout, W. H. Rand, J. H. Raymond, H. N. Read, W. W. Reese, J. D. Rushmore, W. G. Russell, J. C. Shaw, A. J. C. Skene, E. R. Squibb, Jerome Walker, R. L. Van Kleeck, Wm. Wallace.

COMMITTEES OF THE SOCIETY.

HYGIENE.

Drs. B. F. Westbrook,	N. B. Sizer,	D. E. Chace.
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THERAPEUTICS AND CLINICAL MEDICINE.

Drs. J. A. McCorkle,	A. Hutchins,	E. H. Bartley,	A. R. Paine,	A. R. Matheson.
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OBSTETRICS.

Drs. J. R. Vanderveer,	A. S. Clarke,	E. Palmer,	W. Wallace,	B. A. Segur.
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SURGERY.

Drs. J. D. Rushmore,	J. S. Wight,	G. R. Fowler,	A. J. C. Skene,	P. L. Schenck.
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REGISTRATION.

Drs. J. A. Jenkins, A. S. Clarke,	Drs. W. G. Russell, Z. T. Emery,	Drs. F. W. Rockwell, A. Haslett.
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PHYSICIANS' MUTUAL AID ASSOCIATION.

Drs. W. W. Reese, N. W. Leighton,	B. A. Segur, A. L. Bartlett,	A. Hutchins, S. H. Olmstead,	J. A. Jenkins, A. W. Catlin.	R. M. Buell,
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PROCEEDINGS
OF THE
MEDICAL SOCIETY OF THE COUNTY OF KINGS.

VOL. VII.

APRIL, 1882.

No. 2.

PHYSICIANS AND HOUSEHOLD SANITATION.

BY C. F. WINGATE, ESQ.

For a layman to venture to address such an audience as that before me upon a sanitary subject seems the height of presumption, when one reflects how vast a debt sanitary science owes to the medical profession. Founded by physicians, its growth has been mainly due to their voluntary and disinterested labors, often at great personal and pecuniary sacrifice. The mere enumeration of the names of some of the most active sanitarians of our time, as Jenner, Chadwick, Simon, Farr, Angus Smith, and Richardson in England; Liebig, Virchow, and Pettenkofer, in Germany; Pasteur, in France; Fergus, Russell, and Carmichael, in Scotland; and Bigelow, Bowditch, Billings, Derby, Griscom, Folsom, Willard Parker, Harris, Baker, Lincoln, Stephen Smith and Kedsie, not to name others in the United States, shows a large preponderance of physicians.

It therefore seems like carrying coals to Newcastle, to offer advice to medical men regarding sanitation. Yet as the old derisive proverb has been set at naught by "the whirligig of time," so it has strangely come to pass that the sanitary engineer can now assume to instruct his betters and even show physicians their omissions in matters properly within their province.

I shall not, however, discuss general sanitation, but limit my remarks to the practical points relating to plumbing and kindred subjects, which have a direct relation to the physicians' efforts to overcome disease.

When so much sickness can be traced to unsanitary conditions due in the main to preventable causes, it is desirable that the family physician should be able to point out such conditions, and in a general way suggest the proper remedies for them. When also so much foolish fear prevails regarding the risks to health from so-called "modern improvements," the physician should be able not only to assure, but to convince his patients, that plumbing, properly executed with good materials, and upon scientific principles, is absolutely safe and is decidedly to be approved rather than abolished. It is idle to talk of returning to the primitive discomforts and abominations of our forefathers in this line. Modern improvements are *improvements*! The world does not move backward, nor readily abandon anything which conduces to comfort and health. Plumbing appliances are hence no more deserving to be done away with than are gas or electricity, the railway or the newspaper, each of which is also open to serious objections.

Of course the physician cannot perform the sanitary engineer's work in detail, but he can at least point out the necessity of watching house plumbing and indicate, in a general way, what steps are necessary to correct defects when they are discovered.

As long since as 1848 Virchow wrote, "Medical reform has had its day and sanitary reform is the question of the hour." He further declared that to preserve the health of the people, especially of the productive classes, is second only in importance to supplying their daily bread. Dr. Austin Flint concludes his resume of American Medical Progress during the past century with the declaration that "the prevention of disease is a higher and more useful branch of medicine than therapeutics."

These extracts are "signs of the times," and represent the best thought of medical men, if not the practice of the profession as a whole. Yet that it is to the physician's interest as well as his duty to master sanitary principles, especially such as relate to the individual and the household, seems clear.

Successful practice of medicine depends upon relieving pain and checking or eradicating disease. How, then, can the physician gain these practical ends unless he can point out the causes of disease and how to remove them? The greatest skill in diagnosis or mastery of therapeutics will be vain, so long as the patient's surroundings are lowering his vitality or poisoning his blood. If the physician can detect these ill conditions, and promptly correct them, will not he receive due credit

from his patient and the latter's friends? If the conditions are beyond immediate correction, and the patient is ordered to leave the house, the physician is entitled to as much credit as he justly claims when an invalid returns from a sea voyage or sojourn in Florida or Colorado, at his instigation, with his health restored.

Again, the true function of the physician is being better understood. Intelligent patients recognize that there is no magic about medicine, and that disease is not removed by incantation or sleight of hand. Every high-minded physician also scorns to rely upon mystery, delusion or pretense. He dares not claim plenary powers over life and death, and he feels the same disgust which Dr. Lydgate expresses in *Middlemarch*, when credited with marvelous "cures" in which he really had no share. An English writer, W. R. Dally, F.R.S., says in the *Lancet*:

"The very expression 'cure,' unless applied with a special meaning, as to an aneurism, a hernia, or the like, has become almost offensive, and will, ere long, be used only by the ignorant and pretentious. The physician does not pretend to cure his patients; he places them in the *conditions most favorable to recovery*, and is thus often the means of averting death and conducting them to health."

It is just this point that I should urge upon all physicians, viz., to make sure that their patients *are* in the conditions most favorable to recovery. Wherever sickness, such as is usually traceable to defective plumbing or drainage, prevails in a house, and no sufficient cause for its existence is apparent, the physician should not be content until an examination has been made by a health officer or other competent person, to demonstrate that the house is free from sanitary defects. Nothing should be taken for granted in such matters, and no evidence accepted regarding the safety of hidden plumbing work, as underground drains, cesspools, traps, etc., except to have them opened to view and their real condition proved beyond a doubt.

Again, every physician should warn his patients, not to lease or buy any dwelling, whether old or new, without having the premises thoroughly examined, and obtaining a certificate of their healthfulness; not the ordinary landlord's or agent's verbal statement that "everything is lovely," etc., but a legal document that will hold good in the courts, and be a basis for obtaining damages in case the house should prove to be unsanitary, and sickness result in consequence. This wise precaution is now being taken by many persons. The examination, however, must be thorough, or it will be useless, as a false sense of security, based upon an incomplete examination, is worse than absolute ignorance.

There is another circumstance which has made it necessary for specialists to take up household sanitation, viz., that much of the literature of

the subject has been written by European authors, and is adapted to climatic conditions and social habits and customs different from our own. Hence an original science of domestic sanitary engineering has had to be developed within a very short time to meet American needs.

It is a significant fact that many of the worst hygienic conditions are found in doctors' dwellings. This is especially so in the case of those who have only a smattering of information on sanitary subjects. In plumbing, as in medicine, a little knowledge is a dangerous thing. Hence, most plumbers complain that physicians are over-confident, and among the most wrong-headed customers. We may commend to the profession the frank confession and counsel of Dr. T. Pridgen Teale, in his illustrated book on "Dangers to Health":

"If by any possibility it could be brought about that every medical man should realize the necessity of looking into the state of his own house, and act upon that conviction, I feel certain that the discovery would be made in so great a proportion of instances that they were living over pent-up pestilence, that we should at once have an army of sanitarians, earnest and keen, to ferret out unsuspected sources of illness."

It may be noted, in this connection, that an English medical committee's examination into the extent to which poisonous wall papers are used, revealed, that out of a large number of cases of sickness due to this cause, the majority occurred in physicians' own families. The inference may well be, "Physician, heal thyself."

The late rapid increase in the mortality of New York City has naturally caused wide-spread alarm. Last year 38,600 deaths were recorded against 31,937 in 1880, an increase of twenty per cent. While the large additions to the city's population from emigration and other causes may account for some of this increase, it can hardly explain all of it.

Careful observers limit the increase in the population of New York to ten per cent. and estimate the mortality of last year as therefore ten per cent. greater than during 1880. This percentage is just equal to the increase in deaths from contagious diseases.

Any one having opportunities for seeing the sanitary defects in the vast majority of city houses, whether occupied by millionaires or mechanics, and whether situated on Murray Hill or Avenue B, can feel little surprise at the statistics of increasing mortality in New York. The constant demand for the doctor's services in so many houses in their normally bad state, and the fact that his services are no longer in demand when they have been put in sanitary condition, tells its own lesson.

On the first of last December there were some two thousand dwellings in process of construction in New York. Outwardly many of them

are substantial and imposing. Not a few are beautiful and comfortable within, but the great mass may be best described in the trade slang as "cheap and diphtheria." These houses were designed for people ignorant of sanitary construction, but who want a conventional type of dwelling, and who are satisfied with marble mantels, hard wood trimmings and showy gas fixtures, but who ignore durability and healthfulness. Like Peter Pindar's razors, they were built to sell, only the buyer is usually sold with the house. They were planned either by builders who worked by rule of thumb, or by architects with only a smattering of sanitary knowledge, or who were restricted by their clients and had no choice but to follow instructions. Lastly, the plumbing was farmed out to the lowest bidder, who usually, having offered to do the work at about the bare cost of materials, took good care to earn a respectable profit by "scamping" the work wherever possible.

This class of houses abounds in Brooklyn as in New York, and they will continue to be built so long as our health authorities lack funds to enforce the plumbing law regulating the construction of new buildings, and so long also as tenants lease dwellings without learning if they are fit to occupy.

DEVELOPMENT OF PLUMBING.

It is constantly asked, Why is it that we have only lately heard of the serious consequences of bad plumbing, and why is it that sewer gas was so little known in the past? To answer this it is necessary to sketch briefly the historical development of plumbing. One hundred years ago there was little, if any, plumbing in ordinary American dwellings. The usual sanitary arrangement consisted of a well, a cesspool and a cistern for holding rain water. Later on kitchen sinks and old-fashioned boilers were introduced, and finally baths and water-closets came into vogue. It was not until the introduction of Croton water in New York, in 1842, that even this state of development was reached. Prior to that date plumbing was confined mainly to ships. It was often elaborate, the plumbing bill for the ill-fated steamer *Arctic* amounting to \$1,200. The work, however, was simple in houses, as in ships, and traps, vent pipes, siphonage and sewer gas were unknown and unmeaning terms. As population increased, and dwellings thickened, the effect of massing people in close quarters made itself felt. The old cesspools, which were roomy and had ample ventilation, were replaced by smaller receptacles, which in time were tightly sealed up, with the ostrich-like idea that if hidden below the ground their contents could not do harm. It was also found less convenient to empty and clean these receptacles, and so they were frequently neglected.

Public sewers were slowly introduced. In 1849 there were only sev-

enty-two miles laid in New York against 341 miles now. Many of the first sewers were only sewers in name, having been laid to carry off kitchen waste alone. They were merely rough stone drains, uncemented, and open, so that when used to receive sewage they rapidly polluted the soil and became simple store-houses of sewerage. Down to a very late date many of the sewers of New York were constructed of inferior material and imperfectly laid. Badly burned bricks, bogus cement and sand that was half loam, were used in making them, while, especially under Ring rule, the contractors who laid them executed their work in the cheapest and most culpable manner. Few of the best sewers are really tight, while the majority leak at every joint, and thus the whole system is an enormous source of soil pollution. From the lack of a comprehensive plan in the beginning, and of competent supervision during their construction, many of the sewers have little or not enough grade, and are not easily flushed. Hence, they become, especially when tide-locked, "elongated cesspools" and mere gasometers for creating evil. Their lack of ventilation leaves small chance for the sewer gases to find vent excepting through the house drains, and the average plumbing affords no barrier against their free diffusion throughout living and sleeping rooms. And here it should be remarked that sewer gas is created not only in the sewers alone, but every inch of waste-pipe in a house, even though used to convey nothing but soapy water, or the waste of melted ice from a refrigerator, can and commonly does produce foul gases. The worst odors are from just such sources, and they are certainly unwholesome. Professor Chandler says that ninety per cent. of the cellars in New York are bad, and I should say ninety-five per cent. are either originally dangerous or made so by neglect.

Let me now describe some of the most common defects found in ordinary dwelling houses in New York, Brooklyn, Boston, Newark, Auburn, and other localities as I have had occasion to visit them.

These defects may be classified under three heads: First, those that cause pollution of the soil; second, those that pollute the air; and third, those that pollute the water supply. In many cases a single defect may produce all three of these results.

Among the sources of soil pollution are badly laid sewers, leaky drains, damp cellars, and leaching cesspools. The damp and foul vapors which arise from soil thus made impure, together with the gasses thrown off from imperfect plumbing fixtures, mingling with the odors of cooking, washing, kitchen garbage, etc., render the atmosphere of our houses most objectionable, and are enhanced by the usual utter lack of ventilation, truly one of the lost arts. Lastly, leaching cesspools in close proximity to wells in the country, and tanks connected directly with

drains in city houses, are too ready means of polluting our water supply.

In inspecting an ordinary dwelling let the physician first visit the cellar and see if it is dry, clean and sufficiently ventilated, notice if the flooring is damp, also if ashes or garbage are stored there for any length of time, and if the cellar air is not drawn up into the living rooms as the main supply for respiration. If there is a furnace, look after the cold air box critically.

Damp cellars abound everywhere, and it is the common opinion among householders that they are not specially objectionable. In many localities they are the rule rather than the exception, and it seems to be expected, as a matter of course, that after every heavy rainstorm, the cellars will be flooded and remain in that state for days, if not for weeks and months. Leader pipes are also allowed to empty on the ground, and their contents percolate below the cellar floor and foundations.

I have found in a fine city mansion such an amount of soil saturation created in this way that the rear yard was covered with fine moss and the brick flooring of the area and cellar could be lifted up without trouble. The entire roof drainage was allowed to soak into the soil, and the refrigerator waste as well. During my visit I judged that a gallon of water entered the ground every minute. The family had occupied the house for several years without ill effects, and could hardly be persuaded that they had run any risk. Sitting on an open powder keg and smoking a pipe is the popular conception of reckless daring, but it is quite as foolish to dwell in one of our modern overheated city houses, built directly over a super-saturated soil, and with every facility for sucking the damp and foul vapors upward into living and sleeping rooms. Yet this is precisely what most of our householders indulge in.

It may be necessary, and it is certainly very desirable, to add to the Sanitary Code a clause requiring cellars to be kept clean, dry, and whitewashed.

Every plumbing fixture should have a trap of sufficient size, placed close to the fixture and supplied with an air vent, to prevent siphonage by its discharge or by that of some other fixture. Where basins or sinks are but seldom used, there is risk of the water seal in their traps being destroyed by evaporation, and they had best be abolished.

Water-supply tanks for drinking purposes often become sources of danger from neglect. They may become filled with dust for lack of suitable covering. The overflow pipe may connect direct with the sewer and thus permit sewer gas to poison the water, while other sources of pollution must be guarded against. Such tanks should be regularly cleaned, and their overflow pipes discharged out of doors, over a water-closet tank, or in some other place where no harm can follow.

Where, as is common in New York, the water does not rise to the upper floors except at intervals, usually during the night, and where there is no pumping appliance, the water-closets cannot be properly flushed and small basin traps may dry out, especially in overheated houses, thus creating great offense from both causes. In such cases especially—but it is desirable in all cases—every water-closet should have a separate cistern to insure a constant supply for flushing purposes, and also to avoid the need of using the drinking supply for this purpose, which is forbidden by English sanitary authorities and by the new plumbing regulations of the New York Board of Health.

Even the best plumbing will not last forever, but needs attention. Leaks may occur to permit the admission of sewer gas from cracks in pipes due to defective castings, or to walls settling in houses built on made ground, or from the strain of the alternate expansion and contraction from hot water, or even from the forcing of lead joints by the pressure of steam discharged from manufactories into the public sewer.

A no less serious evil is the corrosion of lead traps or lead waste-pipes, particularly in old houses which have unventilated drains. This may be caused by the action of sewer gas, so called, or from the use of certain popular disinfecting fluids.

Lengths of pipe have been found completely honeycombed in this way. As such corrosion usually occurs on the upper side of traps or horizontal pipes, it is not easy to detect their presence from the absence of leakage, and the only safeguard is to avoid carrying waste or soil pipes horizontally; also, to extend their upper ends through the roof, and leave them open for ventilation. Lastly, to substitute iron pipes for lead wherever possible, which is now the general rule in all good plumbing practice.

Disinfectants should also be cautiously employed, and it should be borne in mind that while they may disguise a bad odor, they cannot remove it permanently, and that abundant ventilation will alone accomplish this result.

Corrosion sometimes occurs at the joints of lead pipe, contiguous to the line of solder, and is attributed to galvanic action created by the contact of the zinc and lead, but as these openings are apt to leak they are more liable to discovery.

It is a good plan to overhaul all plumbing periodically, say once every year or two, to guard against accidents.

The common practice of running a soil or vent pipe into a chimney flue is open to grave objections, as no matter how constantly the chimney is heated there is always risk of its becoming cool at times, as at night or on Sundays when the fire goes out, and of a down draft carrying sewer air into the living rooms. I have known it to be necessary to

brick up a dining room fire-place from this result, without its cause being suspected. Again the soot from the chimney will often choke up the end of the pipe or the sewer gas may penetrate through the chimney brick and saturate the plaster of rooms, as in the case of a Chicago hotel, so that the stain could not be removed. If any connection is made with a chimney, the pipe should be carried up to the top of the flue and several feet above it, and then a good draft will be secured.

The custom of tightly boxing in all plumbing fixtures is objectionable. It may be more sightly to enclose a sink or basin with wood work and it makes a convenient storehouse for pails, scrubbing brushes and other articles, but it also supplies a charming receptacle for dust and a nice nesting place for rats. Again, the security of pipes and traps is endangered by jamming utensils into such places. Out of sight is out of mind and the housemaid's broom would often reach these places if they were not thus sealed up. The space under water-closets should be specially obnoxious to the neat housekeeper and if left open to view, well painted with liquid asphalt and frequently washed out with hot water it will be much more satisfactory to the eye.

The following general recommendations are submitted as suitable for most modern dwellings:

A trap on the main drain between the house and sewer or cesspool, with an air inlet open where it will not cause offense, so as to flush the entire system of plumbing with pure atmospheric air.

The soil pipe to be extended through the roof, of full size, and ending away from chimneys or windows.

Traps to be placed on all fixtures, with suitable vent pipes to prevent siphonage.

Absolute freedom from soil dampness in cellar or the vicinity of foundations.

The furnace cold air box to be raised above the ground to exclude soil moisture.

All under ground drains to be examined or tested to insure that they are not broken, and if possible replaced by tarred iron pipe with gas-tight joints carried along the cellar wall.

The tank overflow, refrigerator and safe waste pipes not to connect with the sewer under any circumstances, but to run direct to the cellar or to end over the kitchen sink.

No soil pipe to run into a chimney flue.

No pan closet to be countenanced, or any closet without a cistern to keep it well flushed.

No well to be located within two hundred feet of a cesspool.

No garbage or vegetables to be stored in a damp or unventilated cellar.

All cesspools to be ventilated by two openings.

The sanitary school-master is abroad, but he has still much to accomplish. When the Presidential mansion is reported without a trap; when the Governor's house at Albany is found riddled with sewer gas; when churches, schools, courts, prisons and private dwellings are universally deficient in their sanitary arrangements, it seems as if we had need to diffuse with energy that knowledge for lack of which the people perish.

Upon the physician's efforts, more than on any other class in the community, depends how rapid and how efficacious this education shall be. All will admit that the doctor has a right and duty to warn the public regarding health measures, and however zealous he may be, he will be believed to be disinterested in his recommendations.

To quote from Col. Waring: "The health officer, the sanitarian and the paragraphist may do much in the slow work of awakening public opinion; but the *family physician* speaks with the voice of authority. His prescription for the removal of the sources of foul air will produce an effect which can be produced in no other way so surely."

From the ranks of the medical profession must come most of the sanitarians of the future. In every State, boards of health will soon be found, and in time, through their influence, branch boards will be established in most towns, and even villages. There are several hundred such bodies already existing in the United States, and their number will be doubled within ten years. The medical men must aid their formation and advance their usefulness. They should mark out for themselves a distinct position as the leaders and instructors of the public in all matters relating to public health.

But to assume this high and honorable position they must qualify themselves for its demands. We have too much half knowledge circulated upon sanitary matters, too many amateurs and theorists in hygiene, until the public has lost confidence, amid the contradictions of counsellors, and has concluded that one man's advice is as good as another's and perhaps a little better. The medical profession must throw the weight of their influence on the side of the men who deserve to have their words heeded, and who are entitled to weight from their position and experience. They must sustain the expert engineer or chemist whose opinion may be slighted by the practical man or politician.

In Great Britain five hundred millions of dollars have been spent on sanitary work by the government within the past ten or fifteen years. Much of this outlay has been useless and a mere waste of money from neglect to act cautiously and under wise counsel. We in this country must expect to expend equally large sums on sanitary schemes before

many years. Shall we not, then, take warning from the errors of our cousins across the water, and not commit the same blunders which they have made?

HOW SHALL WE RENDER OUR HOMES HEALTHY?

BY D. E. CHACE, M.D.

Whatever tends to render life more agreeable and at the same time aids in the prevention of zymotic disorders, is to be regarded as a benefaction to humanity. That epidemic contagious disorders in densely populated communities are frequent and fatal in character is but too evident. The statement that mortality in cities is greater in proportion than in places having less inhabitants is equally true. How much the comforts, conveniences and adornments of our dwellings have to do with the increased death rate is a question to be seriously entertained by us as conservators of health. Discussion of this or any kindred topic will not, I fear, be followed by any great benefit unless the results of such debate can be placed before the people at large through the press, which is now acknowledged to be the educator of the people. Three (3) indications cover the whole ground of this evening's debate and the fulfillment of these would furnish a solution of the problem involved, viz : how to make our homes healthy.

Pure air, sunlight and plenty of it, and lastly, cleanliness embrace the whole thought.

Brooklyn has to-day a population, with visitors and temporary residents, of six hundred thousand living in 112,000 dwellings. The actual ratio of inmates to each house is greater than a simple division of the two numbers above mentioned would suppose—when we deduct from the sum total the aggregate of houses occupied by *one* family—and know that so many are tenements, whether you call them flats or anything else. That building is to be considered a tenement which contains three families and upwards, even if it be a brown stone front situated on the Heights or Hill and be dubbed an Apartment House. The herding of human beings is to be opposed no matter how it is accomplished. With the exception of a small proportion of houses built within the past ten years, the remainder were not erected with any regard to adaptation to the health of so many inmates, or in other words, kitchens, laundries, etc., have been created in rooms originally intended as sleeping apartments.

Sinks, ranges, water and water-closets are introduced on these floors by the cheapest of plumbing, together with such other changes as may produce a demand for exorbitant rental as interest on original investment. In tenements, including our apartment houses and flats, we find the same transgression of sanitary law, viz : over-crowding—too little cubic space given to allow of pure air, in bed-rooms particularly, and these in nearly every instance located *between* the front and rear and as dark, gloomy and unhealthy as it is possible to make them. *All* houses nowadays contain what are specified in the real estate agent's advertisement as "all imp.:" Hot and cold water furnace—or Baltimore heater—bath tub, water-closets and gas. How much these "necessaries" of an effeminate civilization have to do with zymotic disease and its increased fatality is no longer much of a disputable ground. Let us look for a moment at the three points presented seriatim.

PURE AIR.—Without oxygen the human being cannot live. With a defective supply his system deteriorates, his constitution is impaired, his vitality is enfeebled, and his power of resistance to disease and contagion reduced to a minimum, oftentimes entirely destroyed ; and he not only cannot resist, but invites, through sheer helplessness, his own destruction.

SEWER GAS.—With water-closets, sinks, and bath-tubs in our houses and wash basins in our bed-rooms, where all spend at least one-third of life, sewer-gas, in spite of all plumbers' arts, does penetrate and does vitiate the atmosphere. No trap has yet been invented which will prevent its presence under the existing system of sewerage. Whether this is in itself the *materies morbi* or whether it carries with it "Bacteria," "Bacille," or the "Sepsin" of Bergman, evolved by the putrefaction of animal matter propagated in sewer channels, is not perhaps proper to enlarge upon just here. We do know that it drives out oxygen, that it smells most vilely and that it and health are incompatible. To prove the statement made above, viz : that no trap does effectually exclude sewer gas, the experiments lately made by Prof. Doremus in New York settle conclusively its power of penetration, and the blowing out of corks placed in wash basin outlets, and the lifting of iron covers of man holes over sewer mains by its force are in evidence. Furthermore, it is here declared that *with any* trap, a room in which there is a connection made with the sewer will, if filled with pure air, be allowed to remain closed twenty-four hours, it will be found to contain sewer gas in it, from twenty-five to seventy per cent., according to the trap used, the locality and force of tide and wind all being contributory to varying proportions. This gas exists in enormous quantities and finds its exit in this manner because the main sewers afford a receptacle for its manufacture and do not furnish any adequate opening for its escape.

Moreover, if sewage water flows back at certain seasons and in many districts into cellars, can any one doubt that a gaseous body will not escape more easily and much oftener through the same apertures. The Hudson Avenue Sewer in Brooklyn was constructed at an enormous expense, was intended to do a great deal toward improving the drainage of the territory tributary to it, and in my opinion has done more to create, foster and perpetuate disease than all the others put together. Through the courtesy of the Engineers' Department of the Boards of City Works the following data were obtained and are authentic:

Hudson Avenue sewer extends from East River to DeKalb Avenue.

From River to Nassau St., distance, 2,500 feet ; diameter, 72 inches ; fall, 6 inches to 100 feet.

From Nassau to Johnson, distance, 1,600 feet ; diameter, 66 inches ; fall, 5 inches to 100 feet.

From Johnson through Navy to DeKalb, distance, 1,800 feet ; diameter, 48 inches ; fall, 2 inches to 100 feet.

This sewer drains the section of territory represented as maps E. F. G. in the following table :

DRAINAGE AREA OF THE CITY OF BROOKLYN.—*Acres:*

Map A.....	128	Map J.....	690
Map B.....	173	Map K.....	550
Map C.....	74	Map L.....	2,300
Map D.....	252	Map M.....	3
Map E.....	472	Map N.....	1,650
Map F.....	275	Map O.....	3,250
Map G.....	125	Map P.....	$\frac{1}{2}$
Map H.....	60	Map Q.....	100
Map I.....	726	Map R.....	27
		Total.....	10,558 $\frac{1}{2}$

It is well to note that the Hudson Avenue sewer drains a densely populated area, and has more emptied into it than another embracing more acres of drainage land. The population of the 800 acres drained by this sewer is 100,059. Estimating the loss by weight to the individual to average seven pounds we have a daily deposit in the smaller sewers connecting with this main of a quantity equal to four hundred tons. Primarily the defect would seem to be in the house waste-pipe and its sharp angle which lodges any substance passing into it, and in the smaller street mains where the principal refuse clings to the bottom of the channel wall. Right here one word as to the claim made by those having charge of these sewers. It is the following: the smaller sewers are the places, according to these, where stagnation mostly occurs and the mains are comparatively free for a greater part of the time from the refuse, except as it passes onward in its course towards the river. However, it

stands to reason that large quantities of decomposing poisonous material is constantly in these miles and miles of sewer pipe and that as a consequence gas exists in enormous volumes, as he who has nostrils can verify without further illustration.

Given, then, a current of air blown with storm violence against the exit opening and with a favorable tide to assist in the pressure against this volume of noxious vapor, it *must*, without other means of egress, follow but one course open, and that it takes by entrance to our rooms; even with a pipe leading from waste to roof the volume is so great that even then it overflows into apartments. The following may throw a little light upon the question of our sewers being clean, or rather demonstrative that the filth is in abundance. An examination made under the new administration of local affairs results in this published statement:

"Thus far, twenty-one hundred basins have been found in a very filthy condition, and the contractor has been put to work cleaning them. An examination of the Third Avenue sewer has shown that in parts of it the filth is two feet deep!"

To render the sewer gas innocuous, dilution with pure air is admittedly *the* remedy. So far nothing has been done towards the carrying out of measures securing such results, probably from lack of means, possibly from other causes. Lack of money, disagreement between "the powers that be," have up to the present compelled us to plod along in the old way, recklessly if not criminally. Without any intentional discourtesy, may I be permitted the remark that unless the cause of disease be removed we can only hope to employ measures palliative in the amelioration of diseased states, a cure *not* being possible while such cause remains in force? If it is, as we declare in evidence, that our sewers need attention and care by Health Boards, some one has surely been to blame since the building of these poison beds, the sewers. If, now, there is a doubt, let it be proven or disproved, whether the theory of sewer-gas and microscopic poison germs be tenable or not. If finally money cannot be had to attempt these reforms or institute progressive methods, let the authorities put the onus where it belongs; all that is asked is to have this question treated with consideration. So far, the efforts of all health authorities would seem to tend to the suppression of disease, without successful effort at reaching the cause; can we not expect that under the untrammelled authority now reposed in our local board that it will be the pioneer in an onward movement?

REMOVAL OF THE GAS.—As it would be too much to expect that our sewage system, which has cost so large a sum, is to be overthrown at once, even if we could demonstrate a better, we can only add to the efficacy and destroy whatever may be hurtful. Under existing conditions, viz., diameter, fall and amount of matter in transitu, gas must be manufactured. Can we get rid of it?

Chimneys with proper draughts, constructed at certain distances, and with measured power to draw, will, in the opinion of some of the best engineers of this country, do away with the gas entirely.

The connection of street-lamps with sewer-pipe and the burning of the gas at night has been proposed, and, though not tried to any extent, might doubtless serve as an aid.

Perforation of man-holes has the merit of being indorsed by a couple of very practical and responsible men in their profession; but they are evidently in ignorance if they suppose that these would be kept open, judging from the past in matters of less moment affecting the care of drains, basins, etc.

Disinfectants are simply out of the question of remedial agencies as too costly and too difficult of application.

A director of the State Survey and a member of the State Board of Health was selected to make an investigation of the different methods of sewage, and the results. This included a visit to Paris and London. In a paper recently written for a meeting of the Yale Alumni he states his ideas very clearly upon "How to Escape from Sewage Poison."

For towns that have water supply there are two systems—one the separate system, and one the combined. The former provides small sewers for carrying the sewage; the latter provides for the carrying off of the sewage and rain-water together. I find that wherever the large combined sewers are used they are found to be unhealthful. The common theory that this is due to a gas is utterly without foundation. I conclude that the disease from these sewers is caused by the growth of bacteria (microscopic plants). Their growth is enormously stimulated by the heat, the moisture and the ammonia present in the sewer. They throw off little spores or seeds, perfectly odorless, which are carried into the dwellings from the sewers or wafted through the windows. These are inhaled by the inmates. I therefore utterly condemn large sewers, which afford favorable conditions for the growth of bacteria. Where the separate system is used, the small glazed pipes with which the sewers are laid can be thoroughly flushed and cleaned every day. The bacteria do not grow as they do in the large sewers, and in practice they prove more healthful. The best instance of the truth of this is seen in the sewers at Memphis. The cost of these pipes is only one-fifth of that of large sewers, and they have proved to be without objection on engineering grounds, and are recommended on sanitary principles by the State Board of Health. This system is believed to be the only solution to the mooted question of sewage gas poison.

Notwithstanding the remedy proposed here is endorsed by me in its entirety, I am constrained to add that we here in Brooklyn will have to improve, if possible, what we possess or else have nothing done. As to Brooklyn's doing anything now, it will be believed when it is seen.

Finally, if we have heretofore met the enemy and been vanquished, it is not too late to renew the conflict, and being now enabled to take away his ammunition and weapons, we shall annihilate him. In other

words, let us acknowledge that we have erred, and unless there be a failure, hereafter physicians and boards of health will have only to deal with contagious disease arising from personal contact and importation. For if we can once free the city, then isolation, disinfection, etc., will do in scarlatina and diphtheria what it now does with small-pox—stamp it out.

But while we keep our factories running we shall encounter such dreaded scourges as in the past and present. The objection which I am sure will be raised—How about the occurrence of zymotic trouble in the smaller towns and villages where there is no such plan of sewage?—does not invalidate my argument, and the reply is to be found in the narrative so graphically related in Flint's Practice, pp. 825-6, concerning typhoid fever in a small town in the western part of the State of New York.

OUR HOUSES AND THEIR CONDITION.—The cementing of cellar floors does away with the exhalation of musty vapors and noisome smells from that locality. Many have a water-closet in a closed kitchen extension, and some intelligent (?) people keep a refrigerator there also! What impression such a locality has upon meats, etc., can be compared to nothing else but that made upon the contents of those wire receptacles found in tenement hallways in close proximity to the hall sink and waste pipe.

BED ROOMS are not properly ventilated, and under the accepted style of architecture no means seems thought of to secure the introduction of pure air without the raising of windows, and projection of a current of air into the apartment. Carpets removed for cleansing but once in a year, if then; vessels containing urine which are not air-tight; beds made up without thorough airing, assist our friend the wash-basin in the corner to contaminate the air which we breathe from six to eight hours out of the twenty-four. Bed rooms should not be used as sitting rooms during the day; if necessarily so, the rooms should have thorough change of atmosphere before the retiring of the inmates.

FURNACES and heaters having supplanted to a large degree open fireplaces, united to the burning of immense quantities of gas as light, assist in the consumption of oxygen and depreciate the quality of the remainder. As halls are rarely heated, we observe a difference in temperature in most houses, during the winter months, of twenty and even thirty degrees.

SUNLIGHT AND CLEANLINESS.—In no city does it appear that sunlight is so dreaded as in Brooklyn. Go where you will you notice that the outside shutters are closely fastened, the inside blinds carefully closed or the heavy shades drawn down, lest a ray of light shall enter to fade

Madam's new carpet and supply a little life to the children. The dining room or front basement is the family room, the remainder of the house is devoted to quiet, dust, darkness and company when they call. Flats and apartments use the kitchen for the same purpose—the dread of gossip and curiosity of neighbors being an incentive to exclude all light but that which struggles through the slats of fastened shutters. The saying was an axiom that a nation's progress in civilization was evinced by its use of iron; it now reads: the culture and intelligence of a country is measured by the quantity of soap consumed. Dirt and filth hold their sway among thousands, and it is safe to assert that thousands in cities are born, live average lifetimes and die unwashed as to their bodies from their infancy to the preparation for their shroud. The rooms of this class smell dirty; they emit an odor peculiar and so penetrating as to perfume (?) the clothing of the occupants permanently, for they are never without its bouquet. The modern style of education for young ladies relegates to servants the care of mansions belonging to the wealthy, and careless domestics skim over where there is no competent supervision.

DEDUCTIONS.

1st. Destroy the sewer gas and its inhabitants in some way. Then the plumber can help us. This is indispensable, and is the root of the evil.

2d. If we must crowd, architects should devise plans for houses, apartments, etc., conforming to the elementary principles of hygienic law. Limit, if necessary, the number of human beings which one dwelling may contain. The organization in New York City which leases old tenements, reconstructs and rents the same at about cost to the worthy poor, and enforces cleanliness, is to be encouraged by pen and purse.

3d. Since the "doctor" is employed by the masses more as people hire a mechanic—formulas of health laws—common sense sanitary expedients, stripped of all medical phrasiology and professional mysticism, should be spread broadcast with the same assiduity that "Tracts" are distributed for the unregenerated.

This can be best attained by the secular press publishing authentic statements from responsible medical men. In fine, waving all prejudices, let us give humanity the benefits attained by our study of common interests, for from us is demanded the answer to the query, How shall we render our homes healthy?

DISCUSSION.

DR. SEGUR : The presentation of a paper by a gentleman, not a member of the medical profession, but of another profession, who, as a Consulting Sanitary Engineer, offers us information on " Household Sanitation," shows important progress in a department of medical science, viz : Preventive medicine. It suggests to my mind that various questions, growing out of the conditions in which we find ourselves placed in modern city houses with " all improvements," have become so well settled in the medical and in the public mind that a demand has been made upon the engineering profession for plans and specifications, for structural arrangements, in our dwellings, to the end that the drainage thereof shall be a protection, and not an added and insidious detriment to health and danger to life.

I say a progress. It is not yet ten years since a distinguished member of the American Association of Civil Engineers and once its President, himself an official of a great city, and the author and director of its most important sewerage works, told me that he had to acknowledge to an English gentleman of his own profession, visiting him and seeking information about the drainage system under his care, that he did not know and had not thought of the bills of mortality of the city in which he lived, either in relation to the question of drainage or any other sanitary question. It is encouraging to see the title of Sanitary Engineer appearing among us.

With this view of our advanced position, and keeping in the track of the practical matters and suggestions of the paper of the evening, I shall not raise any theoretical questions of house drainage, or offer any illustrations from my experience this winter of sickness caused by defective drainage and resulting house miasm. But I will not pass this point without saying that I have seen an unusual number of instances this season where the miasmatic nature of the sickness has directed attention to the house drains and where, thanks to the skilled inspection directed by the Department of Health, such drains have been found to afford a passage *into* the house of sewer air as freely as *out* of the house, of the waste matters which by decay and decomposition in the sewers are the sources of the impure air of these hidden cesspools beneath our streets, and quite as near the front of our houses as were the vaults which we have banished from our back yards. It is not inaccurate to speak of the sewers or cesspools, for it is part of the current municipal topics that the new inspectors, appointed by the reforming head of the city works department, report the sewer basins generally full, and in some instances, filth in the sewers as much as two feet deep. That such a state of things should be found is not surprising in view of the published promise that inspectors should be appointed who would inspect. And in view further that, under one of the preceding administrations of the sewers, the Health Department, in the course of an investigation of diphtheria in a certain district of the city, applied to the proper official for information of the state of the sewers in the infested district, and was informed that the knowledge was not to be had, as there was but one lantern in the service. A corps of sewer inspectors and one lantern !

How pleasant it was to read the promise of Mr. Ropes, that he would, in his department of city works, co-operate with the Health Department in preserving the health of the people !

The improvement of the opportunity which our President has made for us this evening, which I desire to suggest to the Society, is in the two following resolutions, which may be very briefly explained. The resolutions are:

Resolved, That this Society will see with pleasure the organization of Sanitary Protective Associations in Brooklyn.

Resolved, That the Medical Society of the County of Kings do earnestly represent to the honorable the Mayor and Common Council of Brooklyn, that the welfare of the City calls for the provision of funds for the enforcement of the Plumbing Law of 1881.

Of the first resolution: About four years ago, in Edinburgh, a Sanitary Protective Association, projected by Professor Fleming Jenkin, and supported by Sir Robert Christison, Prof. Hodgson and others, was formed with 418 members, engineers, chemists, physicians, business men, lawyers, etc. The object was to provide for periodical inspections of the sanitary condition of the dwelling houses of the members.

The London *Lancet* of 13th July, 1878, noticing the first report of the Association, states that in 85 inspections only 10 houses were found in a satisfactory condition. After a brief mention of the instances of badly planned plumbing, imperfect traps, leaking drains, direct and dangerous sewer connections, etc., etc., the *Lancet* remarks: "If 75 out of 85 houses belonging to persons sufficiently educated to appreciate the benefit of such a Society were found to be in so defective a condition, what must be the state of the dwellings of the poor and ignorant?"

In the *Lancet* of 4th March, 1882, is a notice of the first annual general meeting of the London Sanitary Protection Association, I read: "Prof. Huxley, President of the Association, took the chair and read the annual report, which stated that at the end of 1881 the Association had 192 members, 22 of whom are medical men, who had become members in respect of their own dwelling houses. The reports of Mr. Burton, the president engineer, showed that 6 per cent. of the houses inspected during the year were absolutely pestiferous. In a much larger proportion of cases of inspection, in more than $\frac{2}{3}$ of the whole, there were, it appeared, general defects in the drainage arrangements."

If, however, a Brooklyn Sanitary Protective Association were in operation, its benefits of stated skilled inspection of the dwellings of its members and the consequent protection to life and preservation of health, would not reach much the larger class of our population who live in tenement houses, or even thousands of families renting houses and changing from year to year.

The advance of knowledge and a somewhat enlightened, or at least alarmed public opinion (or some influence related in some way to the sanitary situation) induced the Legislature to pass, on June 4th, last year, "an act to secure the registration of plumbers, and the supervision of plumbing and drainage in the cities of New York and Brooklyn."

By the provisions of this act, master and journeymen plumbers were to be registered at the Health Department, and it was made unlawful for any unregistered plumber to carry on his trade in the two cities.

All plans for plumbing of new buildings were to be submitted for approval to the Health Department.

Injunctions in the courts may be obtained to restrain the progress of any work upon a building in which any violation of this act exists.

Perhaps it is not just to suspect that this Act was intended to be a dead letter so far as Brooklyn is concerned. But so far it *has* been; and adds another to the "various Acts" which Parkes, in his classical work, states "have had little effect" in England in improving dwellings, either from insufficient powers or other causes.

Two notable omissions are made in the Act in question. One is, that plans are required to *be* submitted to the Health Department, but nobody is required to submit them. But it is the omission to make an appropriation to pay the salaries of Expert Sanitary officials to examine and report upon any plans that might have been submitted that has prevented the Health Department from acting either in approval or dis-

approval. The Legislature not having required the Common Council or Board of Estimate to supply the Health Department with money, no money has been voted, and, consequently, no work done.

A further consequence may be that the law has not excited any opposition or effort for its repeal *in* Brooklyn. In New York a different state of things exist. The law made an appropriation in that city. The execution of the law followed, and then an effort, by those whose interests were opposed, for its repeal. In support of the law two important meetings of the New York Academy of Medicine have been held, the reports of which in the newspapers have been full, and an important public benefit.

The intelligent discussion by Dr. Frank Hamilton and others of the "Sanitation of Dwellings," has exhibited our profession to the public in a most creditable manner in the field of preventive medicine. These meetings resulted in the adoption of a resolution in favor of the existing law. It is competent, I am informed, for the Common Council of our city to make the necessary appropriation to enable the Health Department to execute the law, and thus secure to Brooklyn that all the dwellings hereafter to be erected shall conform in matters of drainage to a health standard. I move the adoption of the resolutions.

DR. RAYMOND: The history of household sanitation, in this part of the country at least, originated, so far as I know, in the city of Brooklyn, and in this Society. If members will take the trouble to look back in the old files of the TRANSACTIONS of this Society, about the year 1859, they will find that the subject of defective household arrangements, and their relation to zymotic diseases, was discussed by Dr. A. N. Bell, so that sanitary science, and the "House Physician" spoken of by the author of *one* of the papers are older than ten years, as that paper seems to imply. From this time to the year 1873, we meet with hardly a mention of the subject. Reports of local health officers during that time make mention of nothing in connection with this subject of household sanitation. In that part of the report of the Board of Health, for 1873-4, written by Dr. Colton, you will find discussed the question of the relation of zymotic diseases (especially diphtheria), to defective household arrangements of cellars, water-closets, drains, traps, etc., but up to that time there was no systematic effort made to improve the sanitary condition of houses in respect to plumbing. In the year 1875, when Dr. Otterson was President of the Board of Health, this subject came up in connection with a house in Smith Street, and there practical men, acquainted with the subject, made proper examinations. The history of that house is the history of thousands of houses in this city since that day. The details of this story have already been described by the reader of this paper. It was then suggested that the legislature should be appealed to in order that the city might be provided with laws necessary for the proper construction of houses, so that the plumbing should be done in a proper way. There was no organized power to go into houses and compell these things to be done until sickness occurred or offensive odors caused complaints to be made. Pipes could be put in without traps, and with defective connections with the sewer, etc., and no one could prevent it. The first effort of that kind was met with the almost unanimous opposition of the press. It was said that it was an attempt on the part of the Board of Health to grasp more power to invade private houses, and other things to the same effect. They could not give credence to the idea that the motive of the Board was to save the city from disease. The following year witnessed another effort and the result was the same. So that the first attempts, so far as the legal control of house sanitation is concerned, was made by the authorities of Brooklyn. The opposition was so great that the matter was dropped, and it was only upon the urgent representation of the citizens of New York and Brooklyn that a bill was finally enacted,

covering the ground. And now we have a law requiring plans of new houses to be submitted to the health authorities before the plumbing can be executed. There has been 16 plans approved and 1524 houses from July, 1881, to March 25, 1882. Why is not the law enforced? Because there are no funds to use for this purpose. The Board of Health has now on its staff a corps of plumbing inspectors, all skilled in the business; one receives the amount of \$600 per year salary, three of them receiving \$300, and three serve without pay.

These gentlemen, of course, are interested in the matter, and would be glad to have the law enforced; but it cannot be done, because there are no funds, so that it becomes absolutely necessary, in order that the houses shall be inspected, that there shall be funds to do it with. It is hardly fair to charge this deficit to the Board of Estimate. They have not had an opportunity, the law being passed after they had met and adjourned. But there is now an opportunity to carry out the law, and if public opinion were brought to bear upon the authorities that they set aside a portion of the Contingent Fund for this purpose. To do this will require considerable pressure; a great deal of public opinion—and I hope, for the sake of the people who are to live in these new houses, that the law may be enforced.

The tendency all along has been to regard the *gases* from the street sewer as the *bête noir*. Attention has been taken from the house-pipes to the sewer of the street as the source of contamination, and the phrase "sewer gas" has been misleading. The evil can arise from any part of the pipes and from any kind of pipes, or from no pipe at all. It is the filth within the pipes which causes the trouble. It has been asked, why do we not have these troubles in the country? The answer to this is that they do there occur. House plumbing had been needlessly complicated by the thousand and one patent devices put upon the market; that the things to be done were but two—first, to exclude from the house the gases from the street sewer. This was done by a trap at the front wall of the house; and second, to have the house-pipes so arranged that there would be constant currents of fresh air through them. With these precautions, and with traps that any plumber could make, supplied with air-pipes to prevent syphonage, no patent traps were needed, and sewer gas might be defied.

DR. SQUIBB said: The question could all be simplified down to cutting off the street sewer, and then taking care of the sewage of the house otherwise.

DR. OTTERSON said: The point that Dr. Raymond made of putting the trap outside of the foundation of the house he claimed as originating with himself. He endeavored to have the idea adopted by the plumbers at the time he was a member of the Board of Health, but, like the present law, it went to the ground. Now the question of getting rid of the gas after it has gotten into the house is an important one. He advocated the return to that good, old-fashioned open fire-place, and claimed for it many advantages over the present prevailing arrangements for heating houses. It seemed to him that a great many of the comforts of life had been sacrificed to fashion. If he had the formation of a law regarding the building of houses, he would require an open fire-place to be built in every room, which might be closed or not, as desired. If the disciples of Oscar Wilde do nothing else than to simplify our mode of life, they would do a much more important work than would at first appear.

Dr. BENNETT differed from the last speaker in regard to the efficacy of the open fire-place. He did not see how noxious gases which had accumulated in the upper part of the room could get out through the open fire-place. He also spoke of the evils of wash tubs in the laundry. They were an abomination and a stench to the nostrils. Some houses, on account of these accumulators of filth, were perfect pest houses. He thought porcelain or slate tubs much better.

DR. WALKER thought that while the points of the essayist were very important, some of them being new to himself, yet the essayist was somewhat mistaken in attributing all the evils, to which reference was made, to defective plumbing, defective drainage, etc. Much of this evil is due to ignorance or neglect of personal hygiene. He referred to an article which appeared in a newspaper written by some gentleman interested in hygiene, and as he read it, the thought occurred to him, that the writer had grasped the whole subject. After going over the defects of household arrangements, the writer spoke of the importance of the bath, proper clothing, proper food, and all those things were ordinarily ranked under the head of personal, individual hygiene, which to his mind is as important as anything that has been discussed. A second point made by the speaker was in regard to exaggerated statements. It was not long ago that a statement appeared in one of the papers, that a certain school in this city was as bad as the Black Hole of Calcutta, and that the pupils had been invalidated for life thereby. He objected to anybody making such statements in the public press. Anybody who knows the facts concerning the Black Hole of Calcutta, would not feel that it was safe for one moment to allow such things to exist in this city. Care therefore should be taken not to overdraw these facts. A third point is, that, so far as he knew, we have no evidence as yet that diphtheria *always*, or even in the majority of cases, springs from defective house drainage; it is assuming too much.

THE MEDICAL SOCIETY OF THE COUNTY OF KINGS.

A stated meeting of the Medical Society of the County of Kings was held on the evening of Tuesday, March 21st, 1882, at No. 39S Fulton Street, the President, Dr. Charles Jewett, in the Chair, and about fifty members present. The minutes of the last meeting were read and approved.

MEMBERSHIP: The following proposals for membership were made: By Dr. Paine, Glen R. Butler, M.D., 846 Prospect Place; by Dr. McCorkle, J. F. McEttrick, M.D., 46 Bond Street; by Dr. Wyckoff, T. J. Wheedon, M.D., 3S Concord Street; and Arthur J. Wolff, M.D., 202 Raymond Street.

THE COUNCIL reported acceptance to membership of the following: Dr. C. S. Allaben, L. I. C. H., 1881; Dr. J. C. Lester, L. I. C. H., 1879; Dr. Wm. M. Thallon, Col. P. and S., N. Y., 1880; C. H. Williamson, Univ. Pa., 1849; and Dr. Francis A. Schlitz, Univ. of the City of N. Y., 1878.

THE PRESIDENT declared the following to be members elect:

Mary S. Williams, M.D.; E. J. Chapin Minard, M.D.; J. W. Sherfy, M.D.; W. E. Spencer, M.D.; A. H. P. Leuf, M.D.; Thos. C. Giroux; Fred. A. Baldwin, M.D.; H. A. Bunker, M.D.; and Preston Sheldon, M.D.

THE PRESIDENT then introduced as the reader of the evening, Mr. Charles F. Wingate, Consulting Sanitary Engineer. The subject of his paper was: "Physicians and Household Sanitation."

In discussion, Drs. B. A. Segur and David E. Chace read communications relating to the same subject. In concluding his paper, Dr. Segur offered the following resolutions:

Resolved, That the Medical Society of the County of Kings do earnestly represent

to the Honorable, the Common Council and the Mayor, that the welfare of the city calls for the adoption of such ways and means as will insure the enforcement of the plumbers' law of 1881. Seconded and adopted unanimously.

Resolved, That this Society recommend the organization of a Sanitary Protective Association in Brooklyn. The resolution was, on motion, referred to the Committee on Hygiene.

The paper was further discussed by Drs. Raymond, A. Otterson, Walker, Squibb, Bennett and Bartley.

THE PRESIDENT announced the death of Dr. Theodore L. Mason, and on motion, appointed Drs. Hutchins, Dudley and A. Otterson, a Committee on Obituary.

On motion, the Society adjourned.

R. M. WYCKOFF, *Secretary*.

Ἀσκληπιὸς



ὁ Σωτὴρ

· Χαρμα μέγ' ἀνθρωποῖσι, κακῶν ἑλκτῆρ' οδυναῶν.

Hymns of Homer, No. XVI.

PROLIFERATIONS.

—THE NIGHT MEDICAL SERVICE in Brooklyn, authorized under Chapter 221 of the Laws of 1881, has been, in part, begun; but as yet the funds allowed by law—three thousand dollars per annum—have not been furnished by the Board of Estimate. A recent report of the Night Service in New York City shows that 450 physicians are there enrolled, and that in six months 132 of them made 573 calls.

—THE PRACTICAL CYCLOPÆDIA OF QUOTATIONS, 17,000 Quotations, 50,000 lines of Concordance. This Cyclopædia, the joint authorship of Mr. J. K. Hoyt and Miss Anna L. Ward, is, by long odds, the best book of quotations in existence. Royal 8vo, over 900 pp. J. K. Funk & Co., 10 and 12 Dey Street, New York.

—INFANT MORTALITY is so excessive in Paris that it is proposed to give to parents a pamphlet of instructions as to the proper care of young children. This is to be done at the time of the registration of each and every birth, which is there compulsory. This plan has been in operation for some time in the city of Brussels, where it is believed to have worked well.

—THE REGULAR MONTHLY MEETINGS of the Medical Society of the County of Kings are held at 8 P.M. on the third Tuesday of each month, at Everett Hall, 398 Fulton Street.

The April meeting will be held on the 18th, at which the following papers will be presented :

The Detection of Organic Poisons in Medico-Legal Cases with Reference to those of Cadaveric Origin, by Dr. N. B. Sizer.

Pericementitis, Its Manifestations in the Oral Cavity and its Effects on the General Health, by Dr. G. A. Mills.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

OFFICERS AND COMMITTEES FOR 1882.

<i>President</i>	C. JEWETT, M.D., 307 Gates Ave.
<i>Vice-President</i>	G. G. HOPKINS, M.D., 375 Grand Ave.
<i>Secretary</i>	R. M. WYCKOFF, M.D., 532 Clinton Ave.
<i>Assistant-Secretary</i>	W. G. RUSSELL, M.D., 165 So. 9th St., E. D.
<i>Treasurer</i>	J. R. VANDERVEER, M.D., 301 Carlton Ave.
<i>Librarian</i>	T. R. FRENCH, M.D., 469 Clinton Ave.

CENSORS.

B. A. Segur, M.D., 281 Henry St.	B. F. Westbrook, M.D., 174 Clinton St.
A. Hutchins, M.D., 796 De Kalb Ave.	A. R. Paine, M.D., 485 Clinton Ave.
J. D. Rushmore, M.D., 129 Montague St.	

DELEGATES TO THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

(1878 to 1882.)

Drs. J. C. Shaw, C. Jewett, T. R. French,	Drs. G. G. Hopkins, J. A. McCorkle, A. Sherwell, J. H. Hunt.	Drs. J. Byrne, B. F. Westbrook, G. W. Baker,
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Chap. XI., Art. 2, of By-laws: "Any Member elected as Delegate to the Medical Society of the State of New York, who shall be unable to act as Delegate during two successive years, shall be considered to have vacated his position as Delegate."

DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION,

ST. PAUL, MINN., TUESDAY, JUNE 6TH, 1882.

Drs. J. S. Andrews, S. G. Armor, G. W. Baker, H. L. Bartlett, John Byrne, A. W. Catlin, Alex. S. Clarke, L. C. Gray, Alex. Hutchins, J. C. Hutchison, E. A. Lewis, W. H. Martin, A. R. Matheson, A. Mathewson, J. B. Mattison, J. A. McCorkle, Andrew Otterson, A. R. Paine, Ernest Palmer, J. S. Prout, W. H. Rand, J. H. Raymond, H. N. Read, W. W. Reese, J. D. Rushmore, W. G. Russell, J. C. Shaw, A. J. C. Skene, E. R. Squibb, Jerome Walker, R. L. Van Kleeck, Wm. Wallace.

COMMITTEES OF THE SOCIETY.

HYGIENE.

Drs. B. F. Westbrook,	N. B. Sizer,	D. E. Chace.
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THERAPEUTICS AND CLINICAL MEDICINE.

Drs. J. A. McCorkle,	A. Hutchins,	E. H. Bartley,	A. R. Paine,	A. R. Matheson.
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OBSTETRICS.

Drs. J. R. Vanderveer,	A. S. Clarke,	E. Palmer,	W. Wallace,	B. A. Segur.
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SURGERY.

Drs. J. D. Rushmore,	J. S. Wight,	G. R. Fowler,	A. J. C. Skene,	P. L. Schenck.
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REGISTRATION.

Drs. J. A. Jenkins, A. S. Clarke,	Drs. W. G. Russell, Z. T. Emery,	Drs. F. W. Rockwell, A. Haslett.
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PHYSICIANS' MUTUAL AID ASSOCIATION.

Drs. W. W. Reese, N. W. Leighton,	B. A. Segur, A. L. Bartlett,	A. Hutchins, S. H. Olmstead,	J. A. Jenkins, A. W. Catlin.	R. M. Buell,
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PROCEEDINGS
OF THE
MEDICAL SOCIETY OF THE COUNTY OF KINGS.

VOL. VII.

MAY, 1882.

No. 3.

THE NEW CADAVERIC ALKALOIDS AND THEIR
MEDICO-LEGAL INTEREST TO THE PROFESSION.

BY N. B. SIZER, M.D.

When nitrogenized bodies are broken down for bodily nourishment, or in any way changed in the living tissues, there is also produced a small quantity of the so-called "alkaloids." These may be both fixed and volatile, some harmless, others extremely poisonous. These facts have been known for several years by those interested in organic chemistry, and they are of the *greatest possible importance* in reference to medical and chemical experts in cases of alleged poisoning. For this reason I have taken great pains to collect in a practical form what is, as yet, known on the subject, still, perhaps, somewhat obscure.

HISTORY OF THE CADAVERIC ALKALOIDS.

Professor Armand Gautier, of Paris, discovered, in 1872, while studying the chemistry of the albuminoids, that if blood fibrine was caused to putrefy under the surface of water, it became liquified, and produced much albumen, with butyric and acetic acids (this noted, 1844, by Würtz), leucine, tyrosine and leuceine, together with a small quantity of fixed and volatile alkaloids. Many other products have been since observed: phenol (Baumann), phenyl-propionic and phenylacetic acids; paroxy-phenylacetic, succinic and aspartic acids; certain fatty acids,

indol and scatol (Salkowsky), common lactic acid, and perhaps the higher homologues of butyric acid (Gautier and Etard), certain liquids analogous to mercaptan, nitrogen, hydrogen, etc. To separate these alkaloids, Gautier used the following method: The acidified and coagulated putrefying fluid was super-saturated with magnesia, filtered and the filtrate distilled. The vapor of water goes over, carrying a large amount of ammonia, trimethylamine and other volatile organic alkalies. The distillate, saturated with hydrogen chloride, and evaporated to dryness, then extracted with boiling absolute alcohol, gives us certain chlorhydrates of volatile organic bases. These salts, tested by chloro-platinates or chloro-aurates, are found to be crystallizable and partly soluble.

The residue of the magnesia liquid left in the retort, being concentrated *almost* to dryness in vacuo, was mixed with the previously formed magnesia precipitate and then with a large excess of magnesia. Having then been moistened with water, the mass was dried at 60° C., and the dry powder put into a displacement apparatus and treated with ether of a strength of 56 Beaumé.

The fixed bases having thus been dissolved out, their ethereal solution was evaporated and its residue extracted by water, very slightly acid; this aqueous solution being slowly evaporated over quick-lime in vacuo, the salts of the fixed bases will be found remaining in the vessel. (For a modification see art. "Putrefaction" in Würtz, "*Dict. de Chimie*," Vol. II., p. 1,226.)

This method was used by Gautier and mentioned by him in 1873, in print. (See "*Traité de Chimie appliqué à la Physiologie*," Vol. I., p. 253.)

About the same time, Professor Francisco Selmi, an Italian student of medical jurisprudence, starting from a very different standpoint, made observations that led to similar conclusions.

In 1870, he examined the viscera of a man believed to be poisoned. Using Stas' method, he found an alkaloid which he failed to identify with any already known. The same thing occurred to him in the following year, and he thought, on reflection, that it was possible that these anomalous alkaloids might have arisen during the process of putrefaction.

On the 25th of January, 1872, he presented a memoir to the Academy of Sciences, at Bologna, in which he endeavored to show:

1st, that the stomach of an individual dead from natural causes contains compounds which behave like certain vegetable alkaloids in the presence of re-agents;

2d, that these substances are neither creatine, creatinine, nor tyrosine;

3d, that analogous products may be detected in the alcohol of old specimen jars.

Selmi renewed his researches on a large scale in 1874, examining

bodies exhumed after several months' burial, and at last announced that, during putrefaction, true organic poisonous alkalies appear, entirely analogous to certain alkaloids of vegetable origin, well known in therapeutics and toxicology.

Selmi is not only contemporaneous with Gautier in his investigations, but has arrived at similar conclusions, although starting from very different premises. Naturally, his conclusions were opposed. He was asked what proof was there that these alkaloids were not derived from vegetable substances fortuitously remaining in the stomach at the time of death? may they not be medicinal substances administered during life? might they not be some pseudo-alkaloids, *e. g.*, amides? are they *really* of putrefactive origin, or perhaps some of those imperfectly known substances called "extractives," that accumulate in the blood, especially during the last hours of life, and which, after death, may be found in the tissues of the corpse?

These objections were answered by Selmi in a paper presented to the Academy of Bologna on Dec. 6th, 1877, in which he announced that he had obtained two alkaloids, one fixed, the other volatile, by causing pure albumen to *putrefy out of contact with air*.

Gautier had observed, in 1873, that fibrine of blood, well washed and free from all extractives, gave rise to these alkaloids when allowed to putrefy, and Prof. Selmi appears always to have recognized Gautier's priority. (Memoirs of Academy of Bologna, Dec. 12, 1878.)

Certain ancient and isolated observations are of much interest now, in the light of these researches; thus Calvert, in 1860, caused a number of fish to putrefy in closed vessels in a current of air, the evolved gases being passed through a solution of platinum chloride, acidulated with hydrogen chloride. A scanty precipitate was found, which was composed of carbon, hydrogen, nitrogen and (curiously enough) of 11 per ct. of *sulphur*, 68 per ct. of *phosphorus*.

Calvert believed his experiment proved that no hydrogen phosphide or sulphide had been evolved, but that the nitrogen, sulphur and phosphorus of the tissues had come together in the gaseous product as *volatile alkaloids* and not as *ammonia*, etc.—*Chemical News*, Aug., 1860.

Gautier and Etard have repeated this experiment, and do find the phosphide and sulphide in the gases disengaged from the fish, so that Calvert's experiments must be inconclusive.

In 1868, Oser noticed that during the fermentation of sugar with beer yeast an alkaloid appeared, not pre-existing in the yeast, and probably formed at the expense of the ferment cells.

He gives its formula as C_{13}, H_{20}, N_4 , and finds that its chlor-hydrate, when dried in vacuo, is a white, hygroscopic mass, turning brown on

prolonged contact with air; its taste is at first burning, then very bitter. (*Bull. de la Soc. Chimique*, Vol. X., p. 295.) This seems to be the first instance of a definite alkaloid traced to its origin during the life of a ferment.

In 1855, Panum noticed that the poison of putrid wounds is non-volatile, and is comparable, as regards activity, with snake-venom, curare, or vegetable alkaloids generally, and he accordingly named it "sepsine." In 1874, returning to the same subject, he claimed that the poison of putridity was made up of several toxic bodies, *not*, in his view, alkaloids. —*Virchow's Archiv.*, Vol. LX., p. 301.

In 1868, Bergmann and Schmiedeberg obtained a "sulphate of sepsine" from putrid pus, and in the following year, Zuelzer and Sonnenschein claimed that they isolated *another* alkaloid from the same fluid, much more like "atropine" than "sepsine." —*Berlin. Klin. Wochenschr.*, 1869, No. 2.

These observations seem to have remained isolated and doubtful until Gautier proved that these bases were products necessary to putrefaction and the disassimilation of albuminoids, while Selmi's studies have proved the general problem.

Let us now study the nature of these alkaloids derived from putrefying albuminoids, and Ruscon, following Selmi, known by the name of "ptomaines" or "cadaveric alkaloids," derived from $\pi\tau\omega\mu\alpha$ = a corpse.

Selmi, his pupils, and a few others, have made known the results of their labors, their principal works being: "Gazette Chim. d'Italia, v. 1875; "Memoirs of the Academy dei Lincei," June 3, 1876; ditto, 6th of February, 1876; "Cadaveric Alkaloids," by Selmi, Casoli and Pesci, Bologna, 1876; "Ptomaines" by Selmi, Bologna, 1878; "Transactions of the Academy of Sciences of Bologna," 12th of Dec., 1878.

Selmi seems to have always used Stas' method, modified by Otto and by himself with a view to avoid oxidation by contact of air. Having distilled the acidulated alkaline solution of the viscera, he

- (a.) treats this acid distillate with ether;
- (b.) makes distillate alkaline and extracts again with ether;
- (c.) by chloroform;
- (d.) by amylic alcohol.

The ethereal, chloroform and amylic solutions having been evaporated to dryness, the residues are exhausted with acidulated distilled water; this being evaporated, various salts of the fixed and volatile alkaloids are obtained, which are precipitated by the ordinary tests, such as tannin, Nessler's and Meyer's re-agents, the ioduretted iodide of potassium, etc.

These salts are sometimes crystalline, sometimes amorphous, and gave him chloro-platinates and chloro-aurates, etc.

His general conclusions may thus be formulated :

Some ptomaines are soluble in ether, some insoluble ; these latter are soluble in chloroform, amylic alcohol, etc.

All the general re-agents for vegetable alkaloids precipitate the *fixed* ptomaines.

Some are precipitated by platinic chloride, potassic-argentic cyanide, potassic bichromate, etc., but others are not.

Sometimes crystallizable compounds may be formed from ptomaines, especially in presence of hydriodic acid saturated with iodine.

Ptomaines differ notably among themselves, as to their color reactions, according as they are formed at a high or low temperature, or as the process of putrefaction is more or less advanced, or as they are extracted by different solvents.

Their color reactions may be stated thus : Hydrogen sulphate, used with care, gives a violet color ; hydrogen chloride gives (alone, or with the preceding acid) a violet-red developed by heat ; hydrogen sulphate with bromine water gives a more or less marked red, disappearing after a time.

Hydrogen nitrate, warmed with the test for some time, and then saturated with caustic potassa, gives a beautiful gold-yellow color.

Iodic acid, mixed with hydrogen sulphate, then with sodium bicarbonate, gives a violet-red color more or less marked.

The cadaveric alkaloids seem to be very oxidizable bodies, and hence easily reduce other substances, as, for example, iodic and chromic acids, auric and ferric chlorides, etc.; the change being made evident in the latter case by the ability of the iron salt to produce a blue precipitate with potassium ferricyanide. (See Selmi, "*Sulle Ptomaine ed Alkaloide Cadaverici*," Bologna, 1878, p. 11.) This last test is a characteristic reaction which has been used by Brouardel and Boutmy to distinguish the ptomaines from most *vegetable* alkaloids, which also respond to numerous reactions also common to those of cadaveric origin.

When ptomaines decompose, they turn brown or oxidize in the air, sometimes emitting a urinous odor, sometimes a more offensive, even cadaveric smell, sometimes an odor analogous to that of "conicine," and at others, especially in contact with acids, they emit fragrant and persistent odors, recalling those of orange-blossoms or musk.

The fixed ptomaines mostly possess a sharp taste, which seems to benumb the tongue for a time, followed by a constricted feeling in the throat if the dose is at all large, and some also are very bitter.

Some of these compounds are inactive, but others, especially those of *fixed* bases, are very poisonous, producing the following symptoms : Dilatation and irregularity of the pupil, succeeded by contraction;

rapid retardation and irregularity of the heart-beat, followed by convulsions and death, the heart stopping in systole, and usually found empty. So far as my reading extends, I find that Selmi appears, hitherto, to have published no exact analysis of these bodies, but at first endeavored to separate the alkaloids by varied solvents, the mixed alkaloids having been primarily obtained by a modification of Stas' method. Having separated the different varieties, he endeavored to establish their alkaloidal nature by the general re-agents, and then to differentiate each one from the others, and from the well-known alkaloids of vegetable origin, as well by color tests as by physiological effects.

In this connection, it is well to note that Casali, of Bologna, has endeavored to explain them as poisonous acids of the amide group, *e. g.*, as the analogues of the biliary acids. ("Sulli acidi sali biliari et sulla natura chimica della 'ptomaine' del Selmi," Ferrara, 1881) but as A. Gautier has shown ("Journal de l'Anatomie et de Physiologie," No. 5, p. 341, 1881) that his reason for this belief, (*viz.*: that ptomaines disengage nitrogen immediately after treatment with hydrogen nitrate) is futile in view of the equally proven facts that these alkaloids blue litmus paper, and are capable of saturating the mineral acids, to which tests none of the amides ever respond.

Towards the end of the year 1878, Selmi produced a memoir, in which he announces that he has caused the albumen of 16 eggs to undergo putrefaction in a closed vase, then has arrested all putrefaction by saturating the mass with absolute alcohol, which he has then filtered off and examined.

The alcohol was found to have dissolved out two bases, one volatile, the other fixed. The former seems to be odorous and its hydrochlorate is crystallizable.

It is precipitated by tannin, ioduretted hydriodic acid and platinic chloride.

If it be dissolved in somewhat strong hydrogen chloride, it gives a crystalline precipitate with auric chloride. This volatile alkaloid with its salts appears to be non-poisonous.

The fixed ptomaines crystallizing as a chlor-hydrate, in needles, which are very alterable by air, its solutions rapidly browning, especially when concentrated. This alkaloid has all the general reactions of the well-known vegetable alkaloids.

When dissolved in ioduretted hydriodic acid it furnishes long brown needles. On the tongue these produce a biting taste and benumb the touched spot. If the quantity be larger, constriction of the throat results; 30 ctgr. of this, injected under the skin of a frog, killed the animal *with all the signs of death by curare.*

Further information was given by Selmi in his memoir of 1878, published also at Bologna.

Selmi's processes may be conveniently arranged as follows :

CLASS A.—PTOMAINES EXTRACTED BY ETHER.

Cadaveric matter is treated with acidulated

(a) alcohol ; and

(b) filtered off ; and then

(c) alcohol evaporated to dryness in vacuo, leaving

(d) " the acid extract."

(e) this, (d), is carefully exhausted by ether,

(f) and (e) is, like (c), evaporated in vacuo, leaving us

(g) " the ethereal extract," made up of various products, depending on length of time, etc., of putrefaction.

CLASS A, TEST 1.—All solutions of (g) are precipitated by Tannin,
Ioduretted hydriodic acid,
Auric chloride.

CLASS A, TEST 2.—Some solutions of (g) are also precipitated by Mercuric chloride.

If we make a weak solution of (g) in water and evaporate it to dryness, we shall find that if

CLASS A, TEST 3.—3 drops chlorhydric acid, and
1 drop sulphuric acid are added, and the mixture gently heated, we shall find a violet, or violet-red, color appears.

If we proceed as in Class A, Test 3, but add, successively, iodic and sulphuric acids and sodium bicarbonate, we shall *often* see appear, (Class A, Test 4), a *lovely rose color*, but some of Class A, under these circumstances, do *not* redden (Class A, Test 5).

NOTE.—*This is the codeia and morphia color test.*

CLASS B.—PTOMAINES EXTRACTED BY ETHER FROM ALKALINE RESIDUES.

If we take (d), which has already been exhausted by ether, and render alkaline the residue *not* taken up by the ether, let it remain a few minutes, and *again* exhaust by ether, we have

(h) " the alkaline ethereal solution." This, evaporated as before, gives
(j), " the alkaline ethereal residue."

In (j) bases of another class are found, giving the

CLASS B, REACTIONS.

CLASS B, TEST 1.—Have the general reactions of the vegetable alkaloids,

CLASS B, TEST 2.—As a rule *not* precipitated by
Platinic chloride,
Potassic-auric cyanide,
Potassic bichromate.

CLASS B, TEST 3.—Powerfully reduce

Iodic acid,

Auric chloride,

Potassic bichromate, }

Sulphuric acid, } mixed, usually turns greenish.

Perchloride of iron, }

Ferric cyanide of potassium, } “prussian blue” test.

NOTE.—An analogy to (Class A, Test 5.)

COLOR TESTS OF CLASS B.

A drop of sol. of Class B. is added to a drop of slightly dilute acid, sometimes a fine violet tint appears (Class B, Test 6) ; sometimes a *yellow brown*, reddish by transmitted light (Class B, Test 7).

“Fröhde’s re-agent” gives a

Violet-red, }

Yellow, or }

Brown color, }

varying with concentration, &c. (Class B, Test 8).

A solution of Class B. bases, evaporated to dryness, and treated with 2 to 3 drops of chlorhydric acid and a *small* drop of sulphuric acid, and gently warmed will give a *fine violet color* (Class B, Test 9).

Test 9 being repeated, but omitting the sulphuric acid, we have a violet tint, sometimes slowly passing to a blue color (Class B, Test 10).

Test 9, repeated by warming the evaporated solution with nitric acid, then liquor potassa added, a lovely gold-yellow tint appears (Class B, Test 11).

Most bases of Class B give with ioduretted hydriodic acid, crystals of red- or yellow-brown (Class B, Test 12). They may radiate like a fan, or like a wheel.

Bases of Class B are precipitated by tartaric acid, added slowly.

CLASS B, TEST 13.—These tartrates are soluble in warm water (Class B, Test 13 *a*), scarcely soluble in ether, (Class B, Test 13 *b*), crystallize by spontaneous evaporation (Class B, Test 13 *c*).

Class B bases may be divided into two classes, (*a*) and (*b*) ; the “Alpha” class is *very* alkaline ; these combine *at once* with the carbonic acid of the air. The “Beta” class do not so combine, and do not precipitate from their ethereal solution even in presence of a current of carbonic acid gas.

ODOR TEST OF CLASS B.

Some bases of this class emit pleasant odors on evaporating, recalling storax, canella, orange-flower, etc. (Class B, Test 14).

POISONOUS EFFECTS.

The chlorhydrate of Class B, when injected hypodermically, produce momentary dilatation of the pupil, increase of pulse and respiration (*sometimes decrease*), the heart dying in systole.

CLASS C.

If we take the alkaline extract already exhausted by ether, and once more exhaust it with chloroform, we shall separate a new set of alkaloids with different properties.

CLASS C, TEST 1.—Class C bases have piquant taste, often acid or bitter and sometimes benumb the tongue.

CLASS C, TEST 2.—A fœtid or aromatic odor often appears during the evaporation of the chloroform.

CLASS C, TEST 3.—As a *rule* all of this class reduce iodic acid.

CLASS C, TEST 4 (negative).—As a *rule*, Class C rarely respond to the *Class B* color tests.

NOTE.—Class C is *very* imperfectly known as yet.

CLASS D.

This class of bases may be obtained by extracting the same residue with amylic alcohol.

CLASS D, TEST 1.—This class does NOT reduce iodic acid.

With *hydriodic acid* saturated with iodine, Class D gives a *brown* precipitate, made up of microscopic crystals, easily deliquescent (Class D, Test 2).

Class D is *sometimes* inert, but mostly *very poisonous* to animals, death occurring in 5 to 10 minutes with tetanic convulsions. The pupils are partially dilated in the dog.

If we take the amylic alcohol solution, add water to it, and pass a stream of carbonic acid gas through it, to saturation, and then evaporate slowly, the carbonates of the bases are left behind.

Slight traces of *another* ptomaine may still be found in the alcoholic solution and may be dissolved out by acidulated water.

Gianetti and Corona have published an interesting memoir at Bologna in 1880 (Sugli alkaloidi cadaverici o ptomaine del Selmi), in which new information is given.

They obtained the digestive tract of a young man, dead and buried 96 days; digested it in alcohol acidulated with sulphuric acid. On evaporating over a water bath to the consistence of an extract, the residuum was

mixed with powdered baryta, and was then successively exhausted with ether, chloroform, and amylic alcohol. They state that from this single experiment they obtained about 3 grammes of alkaloids.

CLASS 1, PTOMAINES EXTRACTED WITH ETHER.

On evaporating the ether we have an alkaline liquid, proved by H. Cl. *not* to be due to ammonia : odor recalling methylamine, color yellow, changing to brown on exposure to air, and completely soluble in water only when it is acidulated. This base need not be confounded with any known vegetable alkaloid.

The reactions of its sulphate are as follows :

Picric acid : cloudy solution, finally a soft dark brown precipitate.

Tannic acid : abundant precipitate.

Chloride of platinum : crystallized cinnamon color precipitate.

Chloride of gold : a yellow precipitate falls, and at once becomes reduced by the re-agent.

Bichloride of mercury : white ppt.

Meyer's re-agent : whitish deposit.

A drop of this sulphate, evaporated to dryness and gently warmed with chloride of hydrogen, then with sulphuric acid (or with Fröhde's re-agent alone), gives a violet-red spot.

The results of all these tests treated by sodium bicarbonate will develop odors resembling musk or, sometimes, orange-blossoms.

All the *soluble* salts of these ptomaines appear to be deliquescent and turn brown in the air, appearing to absorb the carbonic acid.

1 gramme of the aqueous solution of this ptomaine injected into a dog of a large size, produces, after 25 minutes, the following phenomena :

Irregular and *oblique* pupil, convulsive tremors, rapid pulse but normal temperature, remarkable injection of the capillaries of the external ear, and a *local* rise of 2° C. temperature in the meatus. The animal becomes stupid and indolent and the pupil ultimately contracts.

40 minutes after injection, spasms of facial and limb muscles, slow respiration (28 to minute) and death 45 to 50 minutes after injection.

At the necropsy right heart was full of fluid blood, the left heart soft and empty.

CLASS 2, PTOMAINES EXTRACTED BY CHLOROFORM.

Taking the residue already exhausted by ether, we treat it by chloroform, and obtain a new alkaloid, isolated by slowly evaporating the solvent and treating the residue with acidulated water. It gives the reaction of Class 1, but in addition its sulphate precipitates the bichromate of potassa and the double cyanide of silver and potassium. A dilute alcoholic solution of this ptomaine, injected under the skin of a medium-

sized dog, almost instantaneously sends the respirations up to 125 to 135 per minute, slightly also increasing the rapidity of the heart beat, with injection of the auricular capillaries. After 50 minutes all was again normal.

In a frog, great weakness of the muscles followed in 2 minutes. Heart beat slowed up. The electric sensibility of the nerves was unimpaired, but muscular contractility appeared to be lost.

CLASS 3, PTOMAINES EXTRACTED WITH AMYLIC ALCOHOL.

The previously exhausted residue being again digested with amylic alcohol, a yellow solution was formed, slightly fluorescent. On agitating the evaporated residue with acidulated water, the ptomaines extracted thereby give the general reactions already specified, except that they *do not* reduce chloride of gold in the cold. They are precipitated by phospho-tungstic and phospho-molybdic acids, as a greenish-blue substance. This precipitate, injected into a frog, stupefies it, dilates its pupil, destroys *all cutaneous sensibility* and causes death by general relaxation of all the muscles. The authors, hence, conclude :

1. That fixed cadaveric alkaloids are generally highly poisonous.
2. The free ptomaines are more dangerous than their salts, especially those soluble in ether.
3. The following phenomena are to be observed in frogs when subjected to their action :
 - (α) dilatation of pupil followed by contraction.
 - (β) tetanic convulsions, soon followed by muscular flaccidity.
 - (γ) slowing of cardiac heat ; rarely acceleration.
 - (δ) absolute loss of cutaneous sensibility.
 - (ϵ) abolition of muscular contractility.
4. In dogs the phenomena are as follows :
 - (α) irregular pupil, ultimately contracted.
 - (β) vaso-motor paralysis in the external ear.
 - (γ) very slow respiration.
 - (δ) somnolence, quickly followed by convulsions and death.
 - (ϵ) loss of muscular contractility.

The authors just quoted refer to the extreme loss of muscular contractility as being exceedingly remarkable.

This curious fact at once reminds us of those poisonous alkaloids extracted from mushrooms, especially the so-called "muscarine." (See Gautier, "Comptes Rendus du Congrès International d'Hygiène," 1878, vol. ii., p. 296). Gautier has recently confirmed this fact ("Journal de l'Anatomie et de la Physiologie," 1880, p. 348, No. 5), by showing that muscarine, like the ptomaines, decomposes a mixture of a ferric salt and ferri cyanide of potassium, prussian-blue being found.

Corona's observations tend to separate the ptomaines from *vegetable* alkaloids and also from "curare," which leaves contractility to the muscles under the electric stimulus, as well as the sulpho-cyanide of potassium, which abolishes the electric contractility, except in tetanus.

The cadaveric alkaloids usually found in the viscera of *recently* deceased persons, present reactions different from those produced by longer putrefactive changes.

The previous statements as to the properties of ptomaines are true of those obtained at 2 to 3 months after death.

Brouardel and Boutmy (*"Annales d'Hygiène et de Médecine Legale,"* series 3, vol. v., p. 501, 1880), have investigated cadaveric alkaloids extracted by Stas' method within a few days of death and obtained the following results :

RE-AGENT.	MAN DEAD OF ASPHYXIA.	MAN DEAD OF PRUSSIC ACID.
Meyers	Pale Yellow Ppt.	None.
Picric Acid	Abundant Pale Yellow Ppt.	None.
Nitric Acid	Gold Yellow Ppt.	Pale Brown Ppt.
Phospho-Molybdic Acid...	Abundant White Ppt.	
Sulphuric Acid	Violet Color (with heat)...	Violet Brown.
Nitrous Acid	Yellow Brown ...	Intense Yellow.
Sulphuric Acid and Potass.		
Bichrom.	Intense Green	Green.
Iodic Acid	Ppt. of Iodine.	Iodine.
Silver Nitrate	Ppt. White, Silver reduced, Liquid Rose Color.	Same as in the other corpse.
Ioduretted Iodide of Potass.	Brown	
Bichlor. Hg.	None	None.
" Pt.		
Perchloride Iron		
Chloride of Gold	Ppt. Yellow White	Ppt. Yellow White.

Let us note a most important fact : "*The ensemble of these reactions belongs to no known vegetable alkaloids!*" They also differ much from those observed by Selmi and Gianetti in cases of much longer putrefaction, when new bases apparently arise. The two varieties of ptomaines in the above table differ most as to the picric acid tests, which does not affect one and precipitate the other.

Amongst the various alkaloids of cadaveric origin, we find certain ones that are more easily confounded with poisonous vegetable alkaloids, and especial care must be taken not only to avoid the condemnation of the innocent in judicial questions, but also to make the evidence so sure that poisoners may not escape the reward of their crimes.

If we take cadaveric matter, render it alkaline and exhaust it with alcohol, we shall find that if we distill the alcohol we obtain an alkaloid in the distillate which has the greatest analogy with conicine. This base,

observed by Selmi, is liquid, volatile and soluble in ether. It has the odor of conicine, but is not yet proved identical therewith.

Ether dissolves out several bodies from alkaline cadaveric liquids, amongst which we often meet ptomaines reducing iodic acid, striking a fine yellow tint with nitric acid, and a violet-red with a mixture of sulphuric and hydrochloric acids, a rose-colored residuum being left after successive treatment with iodic and sulphuric acids, and then neutralizing the acids with carbonate of sodium.

All these reactions are peculiar to codeine, except the reduction of iodic acid and the coloration by nitric acid, which *may* be caused by impurities. Fortunately, Pellagri's re-agent (coloring morphine and codeine and not the ptomaines) and Erdmann's re-agent furnish an accurate means of distinction.

If we examine the class of ptomaines which are insoluble in ether, but soluble in amylic alcohol, we shall find them more difficult to distinguish from morphine, and it is not safe to conclude that the morphia is present, unless confirmed absolutely by Pellagri's re-agent, as well as the perchloride of iron and the acetate of lead tests. Physiological tests, though often valueless, here prove useful, because morphia kills slowly and requires a large dose, stupefying the animal and leaving the muscles sensitive to the electric current, while the ptomaines destroy contractility.

Among the ptomaines extracted by ether we find certain ones, which, gently warmed with concentrated sulphuric acid, develop an odor resembling orange or peach blossoms. This reaction has been indicated as characteristic of atropia. With care, however, no error need be committed. If we leave the odorous precipitate in water and exposed to the open air for several days, we still get very strongly the orange-blossom or hawthorn-blossom odor, but in the case of atropia the odor is very fugitive indeed. The ptomaine gives a transient and irregular dilatation of the pupil, while that of atropia is complete and lasting.

Certain ptomaines soluble in ether have been confounded with *delphinine*.

This base has rather indefinite characters; its taste is acrid, somewhat bitter; treated with concentrated sulphuric acid, a clear, brownish or reddish color appears. If dissolved in sulphuric acid, it gives the same tint with bromine water and Fröhde's re-agent.

The ptomaines *do not give* these reactions. Delphinine, in fatal dose, leaves the heart in diastole; the ptomaines *always* in systole and empty.

Brouardel and Boutmy examined the corpse of a man after eighteen months' burial in water, which had almost entirely been transformed into adipocere. Stas' method extracted a small quantity of a fixed alkaloid, with the following peculiarities:

- (α) strongly blues red litmus paper.
- (β) abundant precipitate by Meyer's re-agent.
- (γ) white flocculent precipitate by potassa.
- (δ) cold nitric acid gave no color.
- (ϵ) warmed, a violet tint appeared.

NOTE.—That the reaction (ϵ) resembles morphia, codeia, brucine, atropine and veratrine.

(ζ) a mixture of sulphuric acid and binoxide of barium colors it brick-red (cold) and violet (warm).

NOTE.—This is a veratrine reaction.

(η) concentrated and boiling hydrochloric acid gives a cherry-red tint.

NOTE.—This is the best defined and standard test for veratrine.

(θ) it kills animals with all the muscular effects attributed to veratrine, with which it is almost sure to be confounded, were it not that

(ι) the ptomaine instantly reduces the ferrid-cyanide of potassium, giving a blue tint on adding a drop of solution of perchloride of iron.

NOTE.—That veratrine does *not* reduce the potassium salt. (“*Annales d'Hygiène et de Médecine Légale*,” 3me. Serie, t. iv., 1880.)

This one example is, to thoughtful men, a source of sufficient anxiety, lest criminals should escape, or the innocent be punished, for want of information or care on the part of the chemist.

The authors last quoted have taken an important step in this direction. (Op. cit., vol. v., p. 497.) They have shown that while ptomaines, in neutral or slightly acid saline solution, successively treated with the Prussian blue test liquids (vide supra), produce *immediately* the blue color; almost all the vegetable poisonous alkaloids give *no color* in the same solution. They have proven this *negative* result for

Aconitine,	Capsicine,	Delphinine,	Narceine,
Atropine,	Cinchonine,	Digitaline,	Narcotine,
Brucine,	Codeine,	Emetine,	Papaverine,
Caffeine,	Colchicine,	Eserine,	Quinine,
Cantharidine,	Conicine,	Meconine,	Solanine,
	Strychnine,	Thebaine.	

To these alkaloids, not giving the blue test, Gautier adds (op. cit., p. 352), from his own observations,

Anemonine,	Cryptopine,	Pilocarpine,
Peltierine,	Quinidine,	Sabadilline,

as well as these neutral compounds mostly poisonous:

Theobromine,	Cubebine,	Coriamyrtine,
Picrotoxine,	Digitaline.	

The test, then, is the *instantaneous* formation of Prussian blue in a neutral or slightly acid saline solution, and identifies ptomaines from the

various vegetable alkaloids and toxic substances, which *do not* give the blue color under similar circumstances.

The exceptions are necessary to be stated. Morphine and veratrine given first a green then a blue precipitate.—*Brouardel and Boutmy*.

Apomorphia and muscarine give the blue color at once.—*Gautier*.

Amorphous aconitine, eserine, ergotinine (amorphous) and liquid hyoscyamine re-act at once.—*Tanret*.

Gautier also states that he finds colchicine, emetine, igasurine, nicotine, and, according to Tanret, crystallized aconitine, ergotinine and even amorphous or crystallized digitaline to give, with the ferrid-cyanide, a *green* color *slowly* passing to *blue*, but Gautier, Brouardel and Boutmy have not observed this conduct in the case of digitaline, which may, therefore, vary in this respect.

With these facts in view, we may say, in a general way, that (except where morphia, apomorphia, liquid hyoscyamine, or muscarine may be present) we are to regard the *instantaneous formation* of Prussian blue in a neutral or faintly acid salt of an alkaloid, found in a cadaver, when ferrid-cyanide of potassium and the perchloride of iron are added, in diluted solution, as indicating that the given alkaloid is, most probably, a ptomaine.

This reaction is not absolutely characteristic of the ptomaines, for we have just seen that a few of the vegetable alkaloids possess it.

Gautier ("*Bull. de l'Academie de Médecine*," 2d series, tome x, p. 62) has also demonstrated that a great number of bases, not vegetable in their origin, but yet mostly *very* poisonous, may give the Prussian blue test very readily. He mentions the following as belonging to this class :

Aniline, methylaniline, para-toluidine, diphenylaniline (phenyls).

Naphthylamine (naphtols).

Pyridine, collidine, hydro-collidine, isopyridine (pyridic bases and derivatives).

Diallylene, diamine, acetanamine.

These all give the blue color, but more slowly and feebly than the ptomaines. Since these might be so easily mistaken, it is well to know that very few have as yet been used for criminal purposes.

Brouardel and Boutmy ("*Bull. de l'Acad. de Med.*," vol. x, p. 770, 2d series) have observed that the ptomaines reduce the silver bromide, *which no vegetable alkaloid does*.

We have now shown that alkaloids exist in cadavers ; that they come from the putrefaction of the proteids ; that they are *not* identical with any known vegetable alkaloids, but may be somewhat easily confounded therewith ; that, therefore, great pains must be taken to differentiate them chemically and physiologically.

These are indeed new truths, but their vital importance will be seen at once by the thoughtful mind.

Let us now take another step and we shall see that, for some time, it has been known that alkaloids are normally found in the *living* body and may be extracted from the bile, the urine, and the juice of the muscles, as well as in certain very active secretions, such as serpent venom; and that they seem to be produced in considerable quantity in pathological processes, especially producing certain functional troubles when the urinary elimination is impaired.

In the first place we find, normally, certain alkaline bases in our secretions, as ammonia and its salts, tri-methylamine, neuine, carnine, and perhaps creatine. These are true alkaloids, that can be extracted from the healthy secretions, by the *same processes* here indicated for the separation of ptomaines.

These are mostly innocuous, but Meissner, Perls, Bogasolowsky and others, have shown that creatinine, injected hypodermically, produces feebleness, tetany and fatal uremia.

Pouchet ("*Contrib. à l'Étude des Matières Extr. de l'Urine*," Paris, 1880) has extracted from the urine a fixed oxydizable alkaloid, its chloraurates and platinates crystallizable and deliquescent, its chlor-hydrates neutral and crystallized. This kills quickly in coma and tetany, with a systotic heart. Notice, if you please, how closely this description approximates that of many ptomaines. Hence Gautier has classed these Pouchet alkaloids among the ptomaines, and, following up the investigation, has recognized in the urinous alkaloids an obedience to the chief test of the ptomaines, that is, the *immediate production* of Prussian blue. Gautier also finds it to be accompanied by certain uncrystallizable nitrogenized substances, apparently belonging to the amide group precipitated by tannin and Nessler's test, although not endowed with *clearly* basic qualities.

These bodies, so near the alkaloids, possess very poisonous properties, analogous to those of the Pouchet alkaloids, as investigated by Rochefontaine.

Can there, then, be any doubt that these extractives, imperfectly eliminated by the kidneys and accumulating in the blood, *must necessarily* produce the series of symptoms of poisoning, known to us as *uremia*?

It is a wonderful fact, that the *percentage composition* of this extractive is *almost exactly* that of the venom of the cobra di capello, and of the pancreatic ferment analysed by Hüffner and extracted from the gland by glycerine. (See *Gautier*, op. cit. p. 356).

Gautier has followed out the analogy by inquiring whether serpent-

venom does not owe its formidable qualities to some alkaloid analogous to the ptomaines and the urinary extractives, as well as to those found in healthy saliva by Pasteur, so recently.

He has analyzed the venom of the "lance-headed viper" (trigonocephalus) and of the India "Naja" and has found two alkaloids, precipitated by tannin, Meyer's and Nessler's tests, ioduretted iodide of potassium and other general re-agents, giving crystallizable chlor-aurates and platinates, soluble chlor-hydrates, which are crystallizable and slightly deliquescent. They instantly precipitate Prussian blue as already often explained; these, then, belong to the ptomaine class. Gautier has found that the most poisonous part of the "Naja" venom is neither an alkaloid or an albuminoid; it is rapidly changed by fixed alkalies, insoluble in alcohol and remains poisonous after being heated to 100° to 120° C.; hence, it is *not* a ferment! As the poison glands of serpents are merely modified salivary glands, it is natural to seek, in healthy saliva, for analogous alkaloids, or extractives.

Normal human saliva contains one or more poisonous substances, which appear to differ much in virulency, according as they are secreted during anger, or not, but, under all circumstances, seem always fatal to birds. Gautier took 20 grammes of saliva secreted in July on a very hot day, evaporated to dryness on a water bath, and the residue weighed 0.25 gr. It was kept at 100° C. for 2 to 3 hours and then extracted by warm water, which dissolved about 0.10 gr. of soluble substances, forming a slightly acid solution after filtration.

Of this 0.10 gr. was injected under the skin of a small bird. Soon stupor came on, unable to stand and his head fell forward. Respiration 140. Eye and pupil normal.

After 14 minutes, pupil contracts, complete stupefaction, but wakes up if shaken, and lies on side. After 30 minutes, stupor continues, eye is closed and awaked with much difficulty. After 50 minutes, keeps awake only two or three seconds. Pupil now dilates. After 60 minutes he revives, but is stupid and sleepy for three or four hours.

As a usual thing, the extract of 30 to 35 grammes of saliva will kill a medium-sized bird in a few hours.

If we precipitate this aqueous extract of saliva by dilute hydro-chloric acid and Meyer's re-agent, we obtain a precipitate, collect it, wash and decompose by sulphide of hydrogen in water, and obtain a liquid which deposits fine microscopical needles of a soluble chlor-hydrate. This salt dissolved in alcohol, gives us, on treatment with chloride of gold and platinum, very fugitive soluble crystals. The solution of the precipitated chlor-hydrate gives us *instantly* the Prussian blue test.

There is, therefore, reason to believe that saliva differs little from serpent venom except as to *intensity* of effect.

Dr. Corre, a surgeon of the French navy (Archiv. de Phys. Norm. et Path., X., iv., p. 405), states that poisoning by the venomous fish of the China and Australian Seas is extremely like that of serpent bites. This observation is valuable, since it shows that poisonous agents, entirely comparable to the ophidian venom, may be produced normally in the most various organs of animals. In these fish, the liver and certain spots of the cutaneous surface secrete the poison; among the Batrachians, the poison glands are part of the skin, and are entirely analogous to the sudoriparous glands in man. Amongst wasps, bees, scorpions and the like still other appendicular organs are present, but these are always apparently cutaneous parts, more or less modified. In fine, the most varied organs secrete these poisons among venomous animals, while in the "*non-poisonous tribes*," these same deadly agents are incessantly eliminated by the skin, the saliva, the urine, etc., no *particular* organ being charged with the function.

CONCLUSIONS.

The poisonous alkalies of cadaveric origin are distinguished, not only by their *basic* qualities and their powerful reducing properties, but also by their greater or lesser poisoning power, and their other physiological effects, such as dilatation, irregularity and final contraction of the pupil; interference with the cardiac rhythm; stupor, tetany and death, with a systolic heart; want of coagulability of the blood; loss of muscular contractility, persisting, after death, even in spite of the galvanic-induced current. These facts are true, not only of Selmi's "*ptomaines*," arising from the putrefaction of the albuminoids, but also of certain toxic compounds contained in the normal excretions and secretions of the higher animals. Ptomaines and serpent venom belong to the same chemical family as the alkaloids in normal saliva.

These venomous substances appear *not* to be pathological exceptions, or putrid products merely, but more like residues left by the tissue metamorphoses, capable, under abnormal circumstances, of accumulating in the blood, or, in a *normal* condition, of excretion by certain glands for definite purposes, the most varied and diverse.

Gautier insists on the somewhat novel statement, that although oxygen penetrates all through the body and is intimately related to vital processes, yet we must not necessarily argue that the processes of assimilation and disassimilation *depend* upon the presence of oxygen, and considers that the tissue life of the higher animals is largely independent of the air. He quotes certain experiments of Pettenkoffer and Voit, which show that, in a certain dog, it appears that out of 1,599 grammes per day of excreted oxygen, at least 100 grammes must have arisen in the body from its autonomous combustion.

This 100 grammes seems to be furnished by the organic matter of the body, and it is estimated that about $\frac{1}{3}$ of the internal combustion must be independent of extraneous oxygen. These changes, then, are very like those observed in putrefaction in the absence of the air, and hence it is conceived we may expect to find the origination of similar products.

Hence, in our secretions, we find "products of putrefaction," so called, such as carbonic acid, ammonia, free and combined, acetic, butyric, and the higher fatty acids, lactic, succinic, phenylacetic and phenylpropionic acids, xanthine and sarkine, hydrogen, nitrogen, sulphide and phosphide of hydrogen, etc., so that the identity is almost complete. This being the case, ought we not, *à priori*, to expect to find in the tissues and secretions of the body, in life or after death, these organic alkaloids? It seems to me that "uræmia" is now thoroughly understood.

In closing, I can but quote the words of Charles Robin, so full of truth: "We have been led to say that ferments, contrary to what we now know, were a sort of peculiar beings, and that fermentation was a phenomenon produced by the force of nature instead of being, as it really is, a physio-chemical reaction like all those which occur naturally in organized being."

HYPNOTISM ILLUSTRATED ON ANIMALS AND HUMAN BEINGS.

BY L. C. GRAY, M.D.

I must confess to the possession of a feeling of reluctance in coming before you to-night, because of the taint of sensationalism which attaches to this subject. I am perfectly well aware that a handsome percentage of this audience will go home to-night persuaded that I have been attempting to deceive them, or that my subjects have been deceiving me.

What I do with these lower animals can be done with human beings. The same phenomena may be witnessed in both. What I do is not done by any peculiar power of my nervous system, or by any sleight of hand. Any one of you here to-night can do it. One of the most curious phenomena which I will exhibit was taught me by Mr. Egner, the bird fancier.

Hefe we have some tadpoles. You see how lively this one is on the palm of my hand. He squirms all over and falls on the floor, yet he

can be hypnotized very easily. We hold him perfectly quiet, lifting the other hand off him easily and gently and you see him resting quietly in the hand while I pass him around for your inspection. Now, how I do this I will tell you when I get through with the manipulations. We will put this tadpole back in the pail, where he is as lively as ever, and take a frog, which you see is also lively; and yet it is an easy thing to hypnotize him. (The frog is placed upon the top of a marble stand and quietly held for a few moments.) Now he has passed into a hypnotized condition. Some frogs are easily hypnotized; they are so susceptible to this influence that they sometimes never recover from it—they die. The other day when I was performing these experiments a frog upon which I operated had a series of tetanic shocks, then passed into this condition, and I was unable to restore him, and within the course of half an hour he died. (He manipulates the frog with a string, engaging it around the fore legs, etc.) You see how he permits me to manipulate him. Some of them pass so thoroughly into this condition that you can drag them all over this table. (The frog is revived and is as lively as ever).

We will next take up this little canary bird. You see how it flutters at the end of the string, and attempts to escape. We place it upon its back, clasp it firmly, and now you see how readily it has passed into the hypnotic condition. I blow upon it, and you perceive how the slightest irritation will cause it to fly away.

We have here a blue jay, a very wild bird, which can be hypnotized as thoroughly as the canary bird. It is thoroughly wild, as you see. I think we can show you how this bird can be lifted by the pen. (The bird is quickly hypnotized, and is then suspended, by the claws, upon a pen handle with head downward and swung around). You can generally do that with a canary bird.

We have here a chicken. It can be hypnotized in the same manner. It flaps around and appears very lively. We lie it on its back on this marble, and after a little, you see, it is hypnotized. Any one of you can do that, and it will lie there for—I don't know how long—probably fifteen or twenty minutes.

Almost all the lower animals can be put into this condition; and I regret that I am not able to show it to you upon more.

There are several young men present who have kindly consented to allow me to operate on them. I will therefore attempt to show you how this hypnotic influence operates upon human beings. If Mr. — and Mr. — will kindly step forward, we will begin with Mr. —. We will endeavor to do this in the simplest manner possible, so as to show you that there is nothing mysterious about it. He simply takes a five cent

nickel in his hand and gazes steadily upon it for a few moments. Then we bend his head forward quite forcibly, press his eyelids gently and firmly down and you notice he is in a hypnotic condition. (He was then instructed to rise and go down the steps of the rostrum. Being supported by Dr. Gray, the subject stumbled down the steps and stood upon the floor of the hall—eyes closed. He was directed to run and catch the ferry boat, whereupon he made desperate efforts to do so. He also went through the motions of rowing a boat, and at the word of command, got down upon his knees, in the position of prayer, then stood up and was aroused. Dr. Gray next said to him: “You cannot open your eyes.” Desperate efforts were made to open his eyes, but without avail. The same may be said with the power to close and open the hands. Mr. ——— was then released from the bonds, and Mr. ——— was requested to come forward. Dr. Gray explained that he had promised not to keep the subject long in the hypnotic state as some difficulty had been experienced a few days before in the college. He fell upon the floor at that time, comatose, and was sick for several hours afterward, vomiting freely. He would not attempt to do more than show how stupid he was. A piece of paper was then placed in the hands of Mr. ——— upon which he gazed intently for several moments, at the end of which time the doctor made the proper manipulations and the hypnotic condition was complete. The only point brought out was, as stated above, the weary, heavy, stupid condition, after which he was aroused, and the experimental portion of the lecture was brought to a close).

And now, continued the speaker, it was not for the purpose of showing you anything remarkable that I came here to-night, and I may say concerning to-night’s exhibition that relatively I attach the least importance to the phenomena seen in these men, and in human beings generally, because in these cases I frankly admit that I have not the slightest means of detecting or of disproving the fact that they can deceive me. A celebrated Frenchman acknowledged that after eighteen years of experimentation upon one subject, he had been grossly and steadily deceived by her, so that with human beings there is hardly any way to detect fraud. But in the case of the lower animals, there can be no fraud or deception. The phenomena are genuine—they cannot simulate as human beings can—and yet we witness phenomena in these lower animals similar to those seen in human beings.

The cause of these phenomena are due, of course, to some change in the nervous system. What these nervous changes are we do not know. We call it mesmerism, which is a misnomer, as Mesmer appeared after the phenomena had been known to others. A better name would be “hypnotism,” a condition analogous to sleep. A German writer,

Preyer, has suggested the name cataplexy, meaning thereby fright. But this is not fright. You can chase any of these animals around and around and they won't pass into that condition; but grasp them suddenly in your hand firmly, so as to overcome all resistance, then open your hand slowly so that they will not perceive it, withdrawing all restraining force, and they will lie in this quiescent state. In the case of the canary bird, we are able to overcome all resistance easily and it passes into this condition very quickly; if there is much struggling or resistance more time will be required. The thing is so simple that, as I have several times already said, anybody can do it.

Now we have no possible means of knowing what all this really means, and so far as its practical importance is concerned, it really amounts to nothing. The phenomena are ranked among what the Germans call in their learned way, *rara et curiosa*—"rare and curious." I think it was Faraday, who, when asked what was the use of a certain thing under discussion, answered by asking another question, "What was the use of a baby?" You can never tell what will be the use of many things, in science, until they have grown up. Braid, of Manchester, claimed that he could do very many things for his patients by putting them in this condition, as inducing sleep, relieving pains, etc. The phenomena are being very thoroughly and systematically studied by Charcot and others in France, and are being taken up also by German scientists, who are experimenting upon members of their own family, and the outcome of all this work, I think, must be something practical.

It is impossible to give you any exact idea of the changes in the nervous system incident to this condition. We can only theorize upon it. We know in the first place that it is a condition of quiescence of certain parts of the nervous system, and an abnormal condition of activity of certain other parts. If you will apply for a moment the doctrine of localization of the nervous system, that one function of the mind is subserved by a certain part of the brain, and another function by another portion of the brain, etc., you can consider this theory with more intelligence. For instance, let us talk of localization very grossly, and assume that this tumbler contains the will, and this book represents the rest of the mind; you can conceive of this portion of the mind, the tumbler, being in a quiescent state, while this portion represented by the book, may be in an abnormally active condition, so that in the first case (that of Mr. —) you can conceive that the voluntary function of his mind, the will, is in abeyance, but the rest of his mind is in a peculiarly abnormal activity and responds to my will instead of his own.

It is not the activity of my will acting directly upon his in spite of his

will. I put him in this condition by fixing his gaze for a few moments upon the five-cent piece. Others may gaze upon other substances. In the case of Mr. — I used simply a piece of paper. Others may be hypnotized by simply pressing the eyelids down; and when that condition is induced, the subject will obey the direction of my mind. But if I were to go into the next room and he were not to know that I was in the next room, I could not put him into that condition without his volition.

It is very difficult to explain satisfactorily what these phenomena mean. In physiology we know several well ascertained facts bearing upon this subject. You can cut off the head of a frog, make a section across its spinal cord half-way up the back, and in the course of a day or two you will observe strongly tremulous movements in the hind legs. If you lay bare the crural nerve in the frog and lift it upon a string, these muscular movements will cease. Just so long as you lift the crural nerve on the string, just so long will the muscular movements remain in abeyance. That shows that there are certain influences that can quiet certain nervous centres. We know that the pneumogastric nerve exercises such a quieting influence upon the cardiac ganglia, and that where it is severed, these cardiac ganglia being left to their own activity, go plunging on, in the wildest manner. There are a great many instances of one portion of the nervous system restraining another. So in the case before us. By making a man gaze fixedly upon a certain object, or holding an animal in the hand and quickly and firmly overcoming its resistance, then letting it go carefully, just as we do with the crural nerve, we can cause a quiescent condition of the central nervous system, then subsequently to that you see all these curious phenomena. That is about as near as we can get to it.

In regard to these two subjects, as far as I am concerned, I have not the slightest doubt of their good faith; but the great difficulty is, and has been all through researches of this kind which have been prosecuted in this country, that they have been so tainted with sensationalism—that there has been so much seeming mysticism about them—that the subject has obtained a bad name, just as electricity has obtained a bad name because of the vagaries of the men who have overpraised it. Finally, if in these disjointed remarks I have led you to believe that there is some philosophy or physiological basis for these phenomena, I have done what I proposed to you I would do.

PERICEMENTITIS: ITS MANIFESTATIONS IN THE ORAL CAVITY, AND ITS SERIOUS EFFECTS UPON THE GENERAL HEALTH.

BY G. A. MILLS, D.D.S.

Pericementitis, its manifestations in the oral cavity and the serious effects upon the general health, is considered by me of great import to the public whom we are called upon to serve, and certainly should be so considered by us as guardians of the public health. This is the purpose I have in appearing before your body to-night, that I may present to your intelligence facts that will awaken your co-operative interest by taking cognizance of the prevalence of this destructive disorder.

While I fully recognize the fact that the department of the healing art of which it is my pride to be a member is a specialty of the general body, yet I am fully aware of another fact—as you doubtless are—that the attention of the oral cavity, comprising the teeth and their allied structures, has been, in the earlier times, so unnoticed, that it created a necessity in the animal economy for the branch or specialty which I represent; and yet while we have the recognition of an unparalleled progress, strange it may seem when I acquaint you with the incontrovertible truth that we have not been able to meet or stay the tide of this cyclone of destructiveness, as yet, to any considerable extent, while the part that has called into action the mechanical ability, has matured into a high degree of excellence. And now the department of education that presides over the culture of surgical ability is being recognized as *the* important factor and requisite to cope with those of a larger range of cultured ability. So fast as this shall occur in individual or aggregate cases, there will be but one mind regarding the appropriate recognition of fraternal counsel.

The subject which I come to speak to you of is not a new one; it may be, for aught I know, as old as disease itself. It has not been an unnoticed one either, in the general literature of the healing art; it has been characterized under a variety of nomenclature, with which you are more or less familiar. So far as my understanding has reached, it has been generally considered as the result of advanced age, and doubtless, for this reason, that the expressions have been the more generally noticed because of the advanced condition so prevalent at this stage of life; while, on the other hand, with the light we now have, it is clearly shown that the mass of cases have their beginnings in early life, and because of the untrained

perception, the minor expressions have failed to gain the notice they now prove to be worthy of. Bleeding and sponginess of the gums and the accumulation of lime, so-called tartar, have been lightly taken into account, and therefore as lightly dealt with, being met simply with some feeble astringent, or by the semi-barbarous operation of scraping or scaling the teeth—of which some of you may still retain a vivid recollection. This being slightly considered, it was found necessary to repeat this inquisition with frequency, and with little, if any benefit, beyond the comfort of the external surroundings of the teeth and gums; but further on, as a larger identification of complications with personal discomforts associated, the interrogation has been not uncommonly put: "Why, this state of affairs? And is there no remedy?" And as often received the almost stereotyped answer: "It is not amenable to successful treatment," while untold suffering has accrued, and the loss of thousands upon thousands of teeth that were yet untouched by the disintegrating process of caries. We have often, also, after our best and perfected operations by fillings, been obliged to acknowledge that these efforts were not enough to prove the highest efficiency of our calling; for did it profit anything to be able to save the tooth and, after all, the socket be swept away by disease? Fortunately, out of every great emergency there always seems to be provided some Moses to lead into a larger freedom.

This brings me to a point in this paper which will go into history. I now call your attention to facts that you may not be particularly familiar with, and which will serve to answer the question why this subject has come so persistently and hopefully to be considered during the few later years. I hold this particular feature of this paper to be so pertinent and just that I cannot withhold its introduction. To Dr. John M. Riggs, of Hartford, Conn., is due the credit of the revival of interest in this subject. A gentleman of no ordinary culture, both as A.B. and M.D., and one who has no peer, in my estimation, in his state, as a true professional man. He has been for some forty years an earnest investigator of the practical details of office practice. His characteristics being somewhat peculiar to himself, he did not come to the arena of discussion in our calling so readily as others, and therefore we did not get the benefit of his observations in this direction so soon as we might otherwise have done. And yet it may be that he came in due time. It may not detract anything of interest to state that Dr. Riggs was the gentleman associated with Dr. Wells, of Hartford, in his experiments with nitrous oxide gas, Dr. Riggs extracting from Dr. Wells' mouth a tooth, it being the first operation of this nature under the effect of an anæsthetic ever made. To use the words of the doctor himself, he says: "This disturbance, under consideration, early enlisted his earnest attention," and he came to

know that he was meeting with an increasing success beyond that, which he discovered, of his fellow practitioners, and did occasionally drop into limited conversation regarding it, so that it came to be known that he was pursuing a line of treatment not general, if at all known anything of by the profession of dentists.

Dr. Riggs' public announcement of his views created no little credulity and curiosity, they being entirely new and different from anything then incorporated in the general literature. He claims to have found it necessary not only to remove the external deposits about the necks of the teeth, but at a certain stage of the disease to follow on to the margins of the process and trim away that portion that had become a foreign body by inflammatory action, instancing it as a principle recognized in general surgery (*i.e.*), to cut back to the life line, or into it, and thus establish a healthy reaction.

I will say, in passing, that human nature is quite the same in our department as in others, and the matter was quietly waived aside by some and vigorously attacked by others—I refer to the older members. Counter claims for originality were put in, but time has not evidenced the truth of them; and I do not hesitate to say that the truth of Dr. Riggs' claim had been fully established to the minds of all fair-minded men who have been cognizant of the discussions that have taken place.

The outcome of this has been the origin of the nomenclature "Riggs' Disease," which has become so familiar among us. Dr. Riggs has, as a result of his attention to this subject, devised a set of instruments for treating this disease, so constructed as to be fully able to search out the disturbing points, thus producing results which warrant the saying that it is a surgical operation of no mean order, and one that cannot be familiarized without extreme care and intelligent training. A novice can do much harm and afflict his patient severely, while the trained hand, presided over by an intelligent mind, can become an alleviator of great suffering and bring much physical harmony out of decided unhealth.

This subject did not gain the attention of our national body until the session of 1877, held in Chicago. In 1876 and 1877 I published a series of six articles in the *Cosmos* under the title of "What I know about Riggs' Disease." These articles have been very extensively circulated and favorably commented upon in this country and foreign ones. Following these articles Dr. Reinwinkle, of Chillicothe, Ohio, an able writer, presented an article to the national body entitled *Pyorrhœa Alveolaris*, meaning the pus-discharging sockets, and has also been defined as catarrh of the gums. Before this body the subject was largely and ably discussed by many of our best men, and since that time it has received more or less attention throughout the societies of our specialty and, as

you are aware, occupied a place among the subjects at the International Congress held at London. There it was brought forward under the title of "Premature Wasting of the Alveolar Process." Dr. Riggs was present and engaged in the debate. During the last year the subject was taken up by the Odontological Society of New York City, being introduced by a paper the product of Dr. Niles, of Boston, a graduate of the Howard Dental Department, and was christened under the title "The Calcic and Phosphatic Diathesis of Odontolithus." Extensive discussions followed the paper, and both the discussions and the paper may be found in the published proceedings of the society. I have felt that I could not be faithful to this subject without giving some idea of the difficulty and opposition that has encountered a matter of such vast interest and importance, but the cheering thought brings encouragement to those who have labored devotedly to place this matter in its proper position and to enlarge its sphere of usefulness in the alleviation of human suffering.

PERICEMENTUM PERICEMENTIS AND ITS HISTOLOGICAL FEATURES.

To Dr. C. W. F. Boedecker, of New York City, we are indebted for the ablest paper upon this subject yet furnished us. It is the product of faithful observation made by actual work with the microscope in the laboratory of Carl Heitzman, and furnishes us an understanding of this subject that makes the way quite plain. These articles can be found in the *Cosmos*, and will be profitable reading to any who may feel an interest in the matter.

As it is not my purpose to environ this paper with any extended details upon the scientific aspect I will not enter largely upon its histological features, only noting the fact that they are comprised within both the myxomatous and fibrous connective tissue series, the former in the early life and the latter more advanced. This will account for the variable associations of discomforts between the early and later disturbances, the former attended with a less degree of pain; and yet, under favorable circumstances, a greater rapidity of progress is made, for the reason that the one is endowed with less resistance than the other.

Pericementum has a connection of continuity both with myxomatous, or gum tissue, and the periosteum. By being so allied to the cementum, a continued disturbance of the periosteum results in the complication of the disease, and the destructiveness not only of these but also the osseous portions forming the socket.

Pericementitis is an expression of a greater or less degree of debility resultant upon nerve degeneracy. It has a variety of phases, yet is more generally manifested at the peripheral margin of the gum. This is characterized sometimes by a slight tinge of congestion, changing the

appearance from a normal, pinkish color to one of deeper red or purple, and at others to an anæmic or bloodless, or colorless appearance. This is followed by a detaching, or relaxing the constriction of the membrane about the neck of the tooth. This is followed by the appearance of foreign substances, or by the absence of them, and an extended detachment of the tissues about the whole or a part of the neck of the tooth. The character of the inflammation—be it acute or otherwise, destructive or less so—is determined by the constitutional powers of resistance or the opposite. By this, I mean if there is a quantity of power to aid in the producing of the *quantum sufficit* of such equality of proportions to establish a normal status of repair; or if it be equal in one and deficient in another, these must necessarily be so overpowered as to result in an overplus of disturbances of territory, the weak succumbing to the strong. This may be the awakening of the bond or bonds of energy in a normal degree, but yet being met by a bond of enfeebled affinity the results can only be destructive in a greater or less degree. Hence the necessity of something in the supply of nutriment that will be adapted to restore the enfeebled bond to its normal power of requisite affinity, so that the equality of waste and repair may be normally adjusted. This statement may or not seem somewhat obscure, but my belief is that when the *modus operandi* is understood of inflammatory action, it will then be made possible to accept this. That the time has, in a large measure, arrived for the physician of the future to establish the fact that his mission is of prevention rather than cure. We, in our investigations, look for exciting causes. To say that I am fully prepared to answer at this point would possibly seem quite like assumption. Many views and theories are advanced. Some attribute the cause to the presence of deposits of lime and their admixtures (so-called tartar). Some claim that these are the results of inflammatory action, and still others call them sanguinary deposits, or residuum of the broken down tissues, blood, etc. Now I cannot accept any of these views as the *cause* of the disease. The *cause* is *in esse*. By this, I may mean, or will so express as a general term, nerve degeneracy. This gives rise to the question of a definition for that. These questions all give rise to the acknowledgment of the impossibility of meeting all the points except upon the knowledge of the organization of tissues. As yet we know but in part, but we are accumulating a few postulates as the results of cultured discriminations as they are now being read from the works of nature through the microscope. And by this we may reasonably hope that the time is hastening when we will be able to throw aside the curtain of mystery and reveal the deductions. While I have referred to the more general manifestations of this disease I have not noticed that there

are many exciting causes, viz.: mechanical irritations, dead pulps, alveolar abscess, crowded conditions of the teeth, accumulations of foreign substances, etc., etc. Not a few cases manifest a peculiar phase, noticed particularly associated with the exhibit of a recession of gum-tissue and not any inflammatory action apparent. These are denominated atrophy of the gum. It is thought by many to be caused by friction of the brush. While this might, under some circumstances, facilitate the loss of tissue, yet it is far from being the cause. This phase is seen at points where the brush would fail to have any such effect, viz.: not only on the labial and buccal, but on the lingual and palatal surfaces of the teeth; and I would add that in many of these cases there is no perceptible presence of deposits of lime.

You will notice that I have, in passing, pointed out the manifestations of the disease in their mildest expressions. Starting out with the familiar adage that prevention is better than cure, it becomes of decided importance to emphasize familiarity with incipient stages, for if intelligence is active at this stage, we have under control the staying of its future destructiveness. The *serious* effects of this disease upon the general health are so well known to those who have familiarized themselves by an earnest and vigorous study of its workings, that it would be a crime to sit in silence and not proclaim the agonies associated. I am satisfied that large numbers are being cut off from their pilgrimage here prematurely, while thousands are dragging out a drooping existence of lassitude, depression and inanition directly and indirectly traceable to this disease. Perhaps I cannot do better than to state a case which will serve the purpose of demonstrating the many.

In the fall of 1878, Dr. Mason, Sr., Pres. of the Long Island Medical College, called at my office and consulted me about a patient of his who was in a wretched and rapid state of decline of health. He said he and his son had exhausted their remedies upon this patient, and he, having seen my articles published in Brochure, had become impressed that possibly this patient was a victim to the disease I had called his attention to. Several dentists had been consulted, but not with encouragement, excepting the extraction of the teeth. The patient came into my hands. She was about thirty-eight years of age, strong, nervous-bilious temperament, married. I found her with a dry, parched skin, feeble pulse, loss of appetite, depressed—sadly—sleepless, nausea on waking in the morning, and great loss of nerve energy. She had twenty-nine beautifully formed teeth, so loose that she had not been able to masticate with any power for a long time—some two years I think. From every socket was exuding a fetid discharge and very copious, so much so that she was obliged to place two large napkins under the side of her face to receive

this flow at night while she slept. Now, this case did not prove to be one of suppurative pericementitis alone; it had involved the osseous formations, and that portion involving the sockets of the teeth was more or less destroyed. This case proved in treatment the necessity of surgical attention in the direction claimed by Dr. Riggs, as I have described. It also proved that it had not been developed altogether during the time she had become cognizant of it, but circumstances of such severity had fastened upon her and so checked the activities of her organization that it was left with an enfeebled power to cope with the disorder already present. The patient being so highly organized, her sufferings were of the acute order, and played great havoc among the distributions of the sensory nerves. The result of the treatment in this case, both surgical and constitutional, brought the patient again into the sphere of activity and usefulness. To use her own words, "she was as good as new." The exciting cause of the rapid decline of this patient was a *terrific mental grief*. I could detail numerous cases that have come under my notice during the last eight years, particularly where a variety of associate disorders had become complicated. I do not need to pursue the enumeration of these facts. You are familiar with many instances where the progress of disorders frequently reveal before unknown ones, resulting in prolonged distress, and not uncommonly, loss of life.

And now I do not think I need to go further, for I do not doubt that the intelligent mind will grasp a proper measure of the truths to which I have called your attention, and which are readily demonstrated in the oral cavities of ninety per cent. of the people, in a greater or less degree of activity. I will not leave you with the impression that the specialty I represent is wholly alive, or in a large sense cognizant of the nature or of the destruction that is traveling madly over their every-day practice. The importance of surgical ability, as I said in my introductory, is becoming to be felt as the advanced step necessary to bring this branch to its needed elevation for usefulness. As yet dentistry, as practiced by the masses, can claim to be no more than Webster gives them credit for: "one who repairs teeth." To my understanding dentistry has a distinctively separate line from oral surgery, and will, I predict, in the near future be so estimated by intelligent people of discernment.

Gentlemen, it is from your ranks that much aid can come to assist those that are zealously devoting their energies to raise this special feature—oral surgery—to its sphere of greater usefulness in the alleviation of human suffering. And if you have been convinced, by what I have brought to your attention, of a conception of its importance, then I will have not spoken in vain.

The resume of this paper leads me to say this: that the revival of

interest in this subject, by being brought up under a new feature, has proved aggressive, and by the controversy, interrogation by thought and action has given additional knowledge. It can no longer be viewed as a trivial matter, for the fact is established that it is a specific disease, exhibiting specified manifestations and amenable to treatment, under the same limitations as all diseases; also, that trained perception and cultured discrimination, gained by concentrated investigations and practice, produces a grade of skill above that of the novice. Further, that the serious import of this subject to the public cannot be emphasized too strongly, for they cannot know too early that which is *first* our duty to be acquainted and impressed with, and in proportion as we come into possession of this knowledge, and are made conscious of its purpose in our hands, we will impress them by the alleviation of their sufferings. "He that hungers and thirsts for knowledge, will, in the giving of it, unconsciously use it as a blessing and a joy to many."

THE MEDICAL SOCIETY OF THE COUNTY OF KINGS.

A stated meeting of the Society was held on the evening of Tuesday, April 18th, 1882, at 398 Fulton Street, the President, Dr. Charles Jewett, in the Chair, and about fifty members present. The minutes of the previous meeting were read and approved.

MEMBERSHIP: Dr. Burge proposed as a candidate for membership Augustine Marcus Fernandez, M.D., No. 115 Summit Street. The Council reported the acceptance to membership of Thos. J. Wheeden, M.D., University of Maryland, 1859; Arthur J. Wolff, Galveston Med. Col., 1876; Glen R. Butler, L. I. C. H., 1880; J. Fennimore McEttrick, L. I. C. H., 1881.

THE PRESIDENT made the following declaration of election to membership: Drs. W. M. Thallon, J. C. Lester, C. S. Allaben, C. H. Williamson, F. A. Schlitz.

The following paper was read, namely: The Detection of Organic Poisons in Medico-Legal Cases, with Reference to those of Cadaveric Origin, by Dr. N. B. Sizer.

DR. L. C. GRAY then addressed the Society on Hypnotism, Illustrated on Animals and Human Beings.

A paper on Pericementitis, its Manifestations in the Oral Cavity, and its Effects on the General Health, was read, by invitation, by Dr. G. A. Mills, a member of the Dental Society.

On motion, a vote of thanks was tendered to Dr. Mills for his interesting and valuable contribution.

On motion, the Society adjourned,

R. M. WYCKOFF, *Secretary*,

Ἀσκληπιὸς



ὁ Σωτήρ

Χάρμα μέγ' ἀνθρώποισι, κακῶν θελκτῆρ' ὀδυνῶν.

Hymns of Homer, No. XVI.

PROLIFERATIONS.

—CHANGES OF ADDRESS.—All May removals by the physicians of Kings County should be promptly notified to W. G. Russell, M.D., 165 South 9th Street, E. D.

A MEMBER OF THIS SOCIETY, who purposes going abroad early in July, will, if desired, take professional charge of any invalid who may wish to secure the benefit of a trans-Atlantic voyage. Address B., care of "PROCEEDINGS."

—THE MEDICAL REGISTER will be issued promptly in May. Advance subscriptions of \$2, forwarded to 130 E. 30th St., N. Y. City, will advantage the Editor, save 50 cts. to subscribers, and secure early delivery of this increasingly useful volume.

—SIR HENRY COLE, whose death was recently reported, was prominent in suggesting the establishment, in every parish district in England, of "guilds of health" at central stations, such as post-offices, for voluntary, self-supporting and non-official work for the prevention of fever and the protection of the general health of each commune.

—TASTELESS CASTOR-OIL is now being advertised in the English journals. The testimony appears trustworthy that this oil is pure and of full strength, and yet free from odor and unpleasant taste.

—DR. STEPHEN WICKES, of Orange, N. J., has in hand an inquiry respecting the dangers of intra-mural burial places. He will be glad to know from our physicians if they have noticed ill-health produced by the pollution of wells that may adjoin any of our old, disused graveyards, or from wells that receive the spring-water descending from the high ground of Greenwood Cemetery, or from any of the other large suburban burial places situated in Kings and Queens Counties.

—THE REGULAR MONTHLY MEETINGS of the Medical Society of the County of Kings are held at 8 P. M. on the third Tuesday of each month, at Everett Hall, 398 Fulton Street.

The May meeting will be held on the 16th.

PROCEEDINGS

OF THE

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

VOL. VII.

JUNE, 1882.

No. 4.

RAPID METHODS OF TESTING MILK.

BY E. H. BARTLEY, M.D.

I do not intend, in this paper, to give a treatise on milk analysis for chemists, but rather review some easy methods of testing milk as applicable to milk inspection. It is rather a paper on inspection of milk, and to inspectors of this common but much abused article of diet. Allow me, in starting out, to call your attention to a few points in regard to the variations to be expected in cows' milk, and the comparison between cows' and human milk. I will here give a table of composition of human and cows' milk, compiled from 190 analyses of the former and 300 of the latter, performed by various authors, and shows the variations to which these liquids are liable, and the average composition of the same.

CONSTITUENTS.	VARIATIONS.	COWS' MILK. AVERAGE, 300 ANALYSES.	HUMAN MILK. AVERAGE, 190 ANALYSES.
Specific gravity.....	1026 to 1036	1030-31	1031
Water.....	85 to 90.6	87.41	87.09
Solids.....	9.30 to 16.00	12.94	12.37
Fat.....	1.25 to 5.00	3.66	3.90
Casein.....	3.00 to 7.20	3.01	.63
Albumen.....		.75	1.31
Sugar.....	2.60 to 5.50	4.82	6.04
Salts.....	0.13 to 0.75	.70	.49

While analysis shows a wide variation in the quality of milk from different cows in the same herd, and from the same cow in different conditions, this variation largely disappears when the mixed milk of the whole herd is examined, provided the conditions of the herd are fairly good.

Care must, however, be exercised in taking the sample to be tested, in regard to the following points :

1st. As to the race or breed of cows. Thus, the Alderney give a milk rich in fat, even as high as 8 per cent. ;* the Ayreshire and Devon, on the other hand, give a milk rich in casein and much poorer in fat.

2d. The age of the cows. As a rule, the milk from a cow after her first calf is poorer than after the next three or four ; and the best milk is given by cows from four to eight years old. The period of lactation also influences the quality of milk.

3d. The time of milking influences the composition of the milk, although this variation is by no means constant. As a general thing, the afternoon milk is the richest ; but it may frequently be found that the morning milk is quite as good, or even better.

4th. The character of the food of the cows may influence both the quantity and quality of the milk.

5th. Whether the cows are stabled or pastured, and the care they receive. Close confinement in an imperfectly ventilated stable gives a poor quality of milk, and is actually dangerous to health, because the cows soon become diseased.

6th. The distance and means of transportation, and degree of agitation to which the milk has been subjected, must be noted.

7th. Diseased cows, of course, should not be allowed to furnish milk for the market.

8th. The amount of "dipping process" to which the can has been subjected may make a considerable difference in the character of the milk remaining in the can. As the result of tests made upon this point, I may give the following from Dr. McAdam (*Am. Chemist*, 1875, p. 422):

	ORIGINAL MILK.	REMAINDER IN SALE CAN AFTER THREE HOURS' DIPPING.
Specific gravity.....	1032	1033.1
Cream, p. c. by volume.....	9	6
Total solids, p. c. by weight.....	12.06	11.39
Solids, not fat.....	9.67	9.58
Fat.....	2.39	1.81
Ash.....	0.70	0.67

In tests made by myself in regard to the specific gravity and per cent. of fat, a similar change was noticed in all cases. It will be noticed that,

* O. C. Wiggin, Johnson's Encyclopædia, art. Milk, by C. F. Chandler.

aside from the change in the per cent. of fat, there is little change in the milk during this sale dipping.

In order to test the influence of feeding on the composition of milk, Dr. Volker† undertook the examination of the mixed milk from the herd (16 to 18 cows) at the Royal Agricultural College, Cirencester, England, during eleven months of the year.

The total solids ranged from 9.3 to 13.8 per cent.; and the fat from 1.79 to 4.12 per cent.; and for two-thirds of the year the fat was below the standard usually adopted for pure milk.

The methods here described are such as are easy to perform, and require little time.

THE LACTOMETER, OR LACTODENSIMETER.

The lactometer is an areometer or hydrometer arranged with a scale especially suited for the specific gravity of milk.

The air chamber should be large in comparison with the stem of the instrument. It is loaded so that it sinks to a proper depth, and then the scale adjusted so as to furnish readings for all ordinary densities found in milk. The scale of densities marked on the instrument is, in some instances, a mere arbitrary scale; but in Quevenne's, which is the best form, the readings give the last two figures of the specific gravity, and these range from 1015 to 1040; or, as marked on the scale, from 15 to 40, on a distance of 5.5 c. m. in length; thus it allows of being read to half degrees. Some of this form of hydrometers carry a thermometer, which registers the temperature at the same time. The temperature of the milk must be reduced to 15° C. or 59° F. when the density is taken; or, a table of corrections must be used to correct the reading on the lactodensimeter for temperatures other than 15°. Thus, if we take the reading at the summer temperature of 77° F. (25° C.), and find the reading on the scale to indicate 28, the true reading for whole milk will be 30.4; and for skim milk, 29.9. It is evident, then, that the thermometer must always be used in connection with the lactometer or lactodensimeter, and it is much better to have the latter with a thermometer attached. The jar in which the instrument is floated must be wide enough to allow perfect freedom of movement without touching the sides. The stem of the lactodensimeter, which bears the scale, to prevent adhesion and allow of more accurate reading, is drawn through the lips and then depressed to the mark 30 before it is released, so that it will not drop far into the liquid before finding its level. The object of this is to prevent the adhering of any milk to the stem, which will increase the weight of the instrument and depress it below its true level.

† Pharmaceutical Journal and Trans., 1875, Am. Chemist, 1875, p. 422.

If this precaution be not taken, a slight error may result in the reading. The specific gravity of pure milk should be between 1029 and 1033, although it must be remembered that samples of pure milk will occasionally be found which may vary, according to Hassall, from 1008 to 1034. The very low densities may indicate a very rich or very poor milk, as regards the per cent. of fat. A specific gravity of 1019 has been found by this author, where the creamometer has indicated 26 per cent. by volume of cream; while in others, with a specific gravity of 1023, the creamometer showed 22 to 25 per cent. of cream. I have found one such exceptionally low specific gravity, due to a large per cent. of fat, as shown by actual chemical analysis; and that, too, in the mixed milk exposed for sale in this city.

Such variations are, however, the exceptions, and are rarely met with, where the mixed milk of dairy cows is examined.

Excluding these exceptional cases, a specific gravity below 1029 must be considered as an indication of a poor quality of milk, either from skimming and watering or watering alone. The effect of skimming is to raise the specific gravity; and the average milkman knows this, and that he can bring the specific gravity down again by the addition of water.

Skimmed milk should have a specific gravity of from 1032 to 1036. A specific gravity under 32, where we have a skim milk under consideration, usually indicates that water has been added. To detect skimming by the lactodensimeter, then, we may take the density before and after skimming off the cream which collects on the surface after standing 24 hours. If the milk before skimming appears to be normal, and afterward shows a density less than 1032, it has probably been skimmed and watered; and the per cent. of fat should be determined by some other means, as a check. If the specific gravity is above 1036, we must suspect that a portion of the cream has been removed; and here, again, an estimation of the fat is called for, or a test made at the stable. In this case, the cows must be milked at the usual time of day, by the person who usually does it, and the cows must be inspected after the milking, to see that they are stripped properly, so as to empty the udders, and then the mixed milk of the whole dairy examined after cooling. Proper witnesses must, of course, be present. This "stable test" cannot well be performed in inspecting the milk supply of large cities, and we must rely upon the examination of the milk found in the market. On the basis of the above, Quevenne has arranged the following table to indicate the amount of water added to pure milk to produce a milk of lowered density:

WHOLE MILK.	SKIM MILK.	WATER ADDED.
1033 to 29.....	1036-32	0 per cent.
29 to 26.....	32	10 "
26 to 23.....	29	20 "
23 to 20.....	26	30 "
20 to 17.....	23.6	40 "

From what is stated above, as well as what follows, it will be seen that the lactodensimeter is not to be considered as a conclusive test as to the sophistication of milk; and doubtful cases, or cases involving litigation, should always be confirmed by an examination by one or more of the following methods, or by the stable test, where this is applicable, or by careful chemical analysis.

There are two sources of error in the indications of this instrument not yet mentioned. The first is caused by the buoyant effect of the milk globules upon the instrument as it floats in the milk. This is small in fresh milk which has not been agitated, but in market milk, which has been partially churned in the process of transportation, handling and dipping, causing considerable sized lumps of butter to separate, it is no inconsiderable source of error.

The second is in the fact that experiment has shown that there is not a constant relation between the density of milk and the per cent. of fat, or any of the other ingredients held in solution. This fact is set forth quite strongly in a paper by Dr. Von Baumhauer, in the *American Chemist*, November, 1876, p. 191. But in spite of all these disadvantages, the lactodensimeter, or lactometer, is of real value if used with precaution, and we do not rely too much upon it in doubtful cases.

THE CREAMOMETER.

This is a graduated tube or jar, closed at one end, in which the milk is allowed to remain at rest for 24 hours. Each division on the graduation is 1-100 of the whole volume of the contents of the jar. It is intended to give the per cent. of cream by measure or volume. Although this instrument is used by milkmen and by inspectors, it does not seem to be reliable in its results, when compared with the estimation of the fat by chemical means. Cream is not of constant composition; and while one sample may contain a large per cent. of fat, another may contain much less.

The same milk will give quite different quantities of cream in the same length of time, after having been subjected to different degrees of agitation. This difference, according to Baumhauer, may vary from 6 to 10 per cent. This same author, as well as others, has seen different milks, containing the same amount of butter, give quite different amounts of cream. Thus, milk of one cow gave 9 per cent. of cream in the morning and 12 per cent. in the evening, while analysis showed a variation of the fat of only 0.1 per cent. The milk of two other cows gave each 10 per cent. of cream, while analysis showed that the one contained one-third more fat than the other. In some milks the fat globules are larger than in others, and hence rise to the surface sooner, and show more

cream in 24 hours ; it is well known that the skim milk of a rick milk, like that given by Alderneys, is poorer in fat than that given by ordinary breeds, because of this difference in the size of the globules. If the mixed milk of a whole dairy is examined, it is probable that a part of these differences would disappear ; but still the results are not always trustworthy, and the time required is a drawback upon its use, and we have other more reliable methods of estimating the fat quickly. If it gives unreliable results alone, it will not be of much value when used in connection with the lactometer, as recommended by some authorities.

THE LACTOSCOPE.

M. Donni first proposed to test milk by the opacity of it, and afterward Vogel improved upon the apparatus and simplified it very much. I present here this evening a new form of apparatus devised by Prof. Feser, of Munich. It consists of a graduated cylinder, open at both ends. The bottom of this cylinder is narrowed somewhat for a distance of about 4 c. m. from the end, and set into a brass collar, into which a brass stopper is fitted ; this stopper carries a smaller opaque glass stopper, which projects into the narrowed portion of the cylinder so as to leave a space between it and the latter of about one c. m. in thickness. Upon this glass stopper are four black lines equidistant from each other.

To use the instrument, fill the pipette which accompanies the instrument, and which holds 4 c. c., with the milk to be tested, and empty it into the instrument through the open end. Then add water, agitating frequently, until the marks on the white stopper can be distinctly seen through the layer of liquid between this and the outer cylinder wall, care being taken to always use the same source of light. Now, by reading the right-hand scale at the level of the liquid in the cylinder, the per cent. of fat is given at once. Another scale on the left gives the amount of water added.

This method is recommended quite highly by some German authors, and is also recommended by Dr. Miles, of the *Agriculturist*. In a limited experience which I have had with it, it seems to agree quite closely with results obtained with the lactobutyrometer, soon to be described. With fresh milk, I believe it will give a very good idea of the amount of fat present, unless the milk be adulterated with starch or some other opaque substance, which is rarely met with.

It is especially convenient in the clinical examination of human milk, and has been used for this purpose in the children's clinic at the Long Island College Hospital, and has detected cases of poverty of this secretion which has been both gratifying to us and a benefit to our patients.

The microscope is of value in the detection of abnormal constituents

in the milk, such as blood, pus, colostrum corpuscles, and the somewhat similar corpuscles occasionally met with in the milk of diseased cows, epithelium, fungi, etc. As a means of judging of the richness of a milk in fat, it cannot be of much value.

Bouchut* believed he had discovered an intimate relation between the numbers of globules and the per cent. of fat; but his figures are so discordant that little dependence can be placed upon them. For example, he found, in several trials with a solution containing one gramme of fat per litre, numbers varying from 45,938 to 108,824 globules of fat per cubic millimetre; a result not very flattering for his method.

If the microscope shows a scarcity of the larger globules, we may suspect that the milk has been skimmed, as these rise first on standing. The microscope should always be used in forming an opinion of any specimen of milk as to its fitness for food.

ESTIMATION OF FAT BY THE LACTOBUTYROMETER.

This method depends upon the fact that alcohol separates from milk, which has been shaken up with ether, an etheric fat solution, the volume of which stands in an intimate relation to the fat dissolved by the ether. The method and apparatus were devised by Marchand, and the instrument was named by him the lactobutyrometer. It consists of a glass tube closed at one end and about one c. m. in diameter and about 35 c. m. in length. Beginning at the closed end, a mark upon the tube marks off 10 c. c. capacity, another 20 c. c., and a third 30 c. c. The last five cubic centimetres immediately below the 30 c. c. mark are divided into tenths. To use the instrument, three pipettes of 10 c. c. each are needed. With one pipette previously cleaned and dried, exactly 10 c. c. of the milk to be tested are brought into the tube; about four drops of acetic acid, or one or two drops of a strong solution of potash, preferably the former, are added, and then, with a second pipette, exactly 10 c. c. of pure concentrated ether are added, and the cork inserted, and the mixture vigorously shaken; carefully lifting the cork two or three times to allow vent for the ether vapor that accumulates in the tube. When the liquid presents a uniform creamy consistency, remove the cork and add, with the third pipette, 10 c. c. of 90 to 92 per cent. alcohol, put in the cork and again shake the contents of the tube until the visible clots are all broken up and the mixture presents a uniformly fine granular appearance, taking care to open the tube two or three times during the process, as above.

The tube is now to be placed in a cylinder containing water at a temperature of 40° to 42° C. (104° to 108° F.), for five or at most ten

* Hygiene de la premiere enfance, Paris, 1879.

minutes, or until the etheric fat globules have ceased to rise to the surface. The water may be heated in a tin or brass cylinder, soldered in an upright position to the centre of a shallow basin of the same material, so as to resemble a large old-fashioned candlestick. A little alcohol is poured into the basin and set on fire. A thermometer is placed in the water in the cylinder, and when the temperature has reached 40° C. the flame is blown out, and the lactobutyrometer placed in the water. When the fat has ceased to rise, the tube is transferred to water at a temperature of about 20° C. (68° F.). The fatty layer in a few minutes becomes clear and is ready for the measurement. Read off the number of degrees and search for this number in the column headed *ether fat solution* in the following table, and opposite this will be found the per cent. of fat in the column headed *per cent. of fat*.

Ether fat Solution.	Per cent. of fat.	Ether fat Solution.	Per cent. of fat.	Ether fat Solution.	Per cent. of fat.	Ether fat Solution.	Per cent. of fat.
1	1.34	11	3.38	21	6.02	31	11.00
2	1.54	12	3.58	22	6.52	32	11.50
3	1.75	13	3.79	23	7.02	33	12.00
4	1.95	14	3.99	24	7.51	34	12.49
5	2.16	15	4.20	25	8.01	35	13.00
6	2.36	16	4.40	26	8.51	36	13.49
7	2.56	17	4.63	27	9.01	37	13.99
8	2.77	18	4.96	28	9.51	38	14.49
9	2.97	19	5.31	29	10.00	39	14.98
10	3.18	20	5.66	30	10.50	40	15.48

About twenty minutes is required for a determination of the fat by this method, and the results are very near the exact amounts found by careful analysis. Various authors have reported upon the results obtained by this method, and they agree in saying that it can be depended on to give the fat within .2 per cent. in nearly all cases, and in the rest within .3 per cent. One marked exception, however, was found by Dr. Cauldwell,* in the examination of two bran-fed cows, where the results were considerably too low. According to his results, as a whole, he says he believes "that, if executed with scrupulous care to all the details of the manipulation, the process, even as it stands, does give more reliable information in regard to the composition of ordinary mixed dairy milk than any other method not requiring delicate balances and skilled chemical manipulation."

The results are usually a trifle low.

I reproduce here the notes of the examination of twelve samples of market milk from the most reliable dealers in this city, during last sum-

* Report Cornell Univ. Experimental Station, 1879-80, p. 62.

mer, taken with a view of comparing the results obtained with the lactoscope and the lactobutyrometer :

NO.	LACTOSCOPE.	LACTOBUTYROMETER.
1.....	2.25.....	2.21
2.....	2.50.....	2.56
3.....	2.50.....	2.66
4.....	2.50.....	2.56
5.....	2.75.....	2.77
6.....	2.50.....	2.33
7.....	2.50.....	2.77
8.....	2.75.....	2.93
9.....	3.10.....	3.17
10.....	3.12.....	3.18
11.....	1.80.....	1.95
12.....	1.40.....	1.54
Average.....	2.47.....	2.55
Difference, .08 per cent.		

It seems from these results that the two methods register quite uniformly, but the lactoscope is a little too low, which I have since found was due to a slight error in the pipette used.

While the per cent. of fat is subject to very great fluctuations in individual cows, and sometimes in whole dairies, it has been noticed that the sugar does not undergo much variation. After the milk is drawn, it undergoes no change until the milk begins to ferment ; while the process of creaming, the effect of dipping from the cans, etc., makes the fat a variable quantity.

It would seem, therefore, that before a sample of market milk is condemned, it would be advisable to have a ready method of estimating the sugar. It will be of use only in doubtful cases, as a check upon the foregoing methods, none of which claim to be accurate in their indication of the composition of the milk. The process which I have used, and which gives rapid, and, I believe, very good results, is that known as Pavey's ammoniated cupric test, which was presented to the Royal Society by him, and published in the PROCEEDINGS, Vol. XXVIII., p. 260, and Vol. XXIX., p. 272 (*Lancet*, April 3, 1880). The solution was proposed for the estimation of glucose and uric acid in the urine ; but it seems to work fairly well applied to the estimation of sugar in milk. The solution is prepared by adding to 120 c. c. of Fehling's copper solution, 300 c. c. of strong ammonia (specific gravity, .880), and adding water to make it up to a litre. Twenty c. c. of this solution will be decolorized, without a precipitate, by .010 grammes of glucose, or by .01866 grammes uric acid, or .0134 grammes of lactose. To use this solution, 20 c. c. are measured into a flask of about 250 c. c. capacity, and about an equal volume of water added. The flask is closed with a doubly perforated cork, through one of which perforations an exit tube passes for the steam, and through

the other the delivery tube of a graduated burette. When the flask has been thus closed, it is brought to boiling over a lamp and kept boiling slowly until the process is ended. After boiling for a minute or two, to insure the displacement of the air in the flask, the solution of milk is run in from the burette until the blue color is discharged. The milk to be tested should be diluted with nine parts of water, so as to make the solution very dilute, in order to get reliable results.

Suppose 10 c. c. of milk are made up with water until the volume equals 100 c. c., and 10 c. c. of this solution decolorizes 20 c. c. of the copper solution; then one cubic centimetre of the milk has furnished the necessary amount of sugar to do this, or .0134 grammes. A litre of the milk will then contain 13,400 grammes of milk sugar. The ammoniated copper solution is much more stable than Fehling's solution, the color being more intense, and giving no precipitate on boiling with the sugar solution, makes it much more manageable than any other copper test fluid.

In conclusion, we may ask the question: Can we detect with certainty, by chemical means, the addition of a *small quantity* of water to any given sample of milk? I am bound to say the answer must be in the negative. With the removal of a large part of the cream, or the addition of a considerable water, it is quite otherwise. But so long as milk is a variable secretion, we cannot put a very narrow limit upon what may be considered a pure milk from the cow.

It seems to me that the only way for the public to protect itself against the dishonest milk dealer resolves itself into this: Fix by law the limits of the composition here, as is done by the analysts of England. Hold the dealer responsible for the quality of his milk, and he in turn will hold the producer accountable for milk of this standard of richness. The man who half starves his cows, and who believes that any hovel is good enough for them, will thus be obliged to leave the market or so feed and care for his cows as to produce a better article. The mere fact that milk has or has not been watered will not then be the question; but whether it is a rich or a poor milk. It should be made a punishable offense, however, as it is now, to sell skimmed milk for whole milk; but if the salesman chooses to sell skim milk as such, or "fore milk" as such, at a reduced price, I see no reason why he should not be allowed to do so. Milk dealers should be licensed, and then have a thorough system of inspection, to examine the milk both as it comes from the dairies to the city and as exposed for sale in the shops.

DISCUSSION.

DR. J. H. RAYMOND remarked that milk examination, of course, is a question which appeals to every physician. He would be obliged to take some exception, however, to the remarks made in the paper in reference to the value of the lactometer,

and the specific gravity test. The results of tens of thousands of analyses have shown that a specific gravity standard can be established as a minimum. That figure has been placed by chemists of this city and New York city as 1029; and he thought it might be considered as well settled that commercial milk which shows a specific gravity below 1029 is watered milk. The lactometer has received for a great many years a bad name. This name has been gained, not because the instrument was unreliable, but because those who used it were not acquainted with the methods of its use, and the instruments which they used were incorrect. As the reader of the paper had already stated, there are as great a variety of lactometers as there are of watches, and it would be as erroneous to say that no watch could keep good time because there have been in the market a great many sham watches which run inaccurately. The original standard, years ago, was 1034, and it was then considered that no milk which registered above that figure at 60° F. was watered milk. Experiments showed that this was too high, and the standard was lowered. The standard, as given above (1029 at 60° F.), is the standard of New York city and Brooklyn, and milk, as sold from the can, which has a less specific gravity, is watered milk. Much has been said against the accuracy of the lactometer, and some time ago a distinguished New York chemist made war upon it in New York, and many cases were prosecuted against dealers; but whenever they were carried up to the higher courts, the value of the lactometer was recognized, and its claim established. Its value is now, so far as he knew, unquestioned. The lactometer test, if properly made, and if the thermometer is used at the same time, is, in the opinion of the speaker, a perfectly safe and reliable instrument. Of course, if the milk reaches above 1029, the lactometer alone is not a sufficient test; but a milk which has been skimmed, then watered, and shows a specific gravity of 1029, can be detected by the eye of an experienced inspector. Milk is said to be adulterated by calves' brains and other substances. The speaker had never met with such milk. If we are to wait for some absolutely reliable chemical method of detecting impure milk, which can be practically used by the inspector, we never will be able to protect the public. A standard must be established. Such a standard has been established; and, so far as he knew, although it has been assailed, yet it has withstood all attacks.

DR. ANDREW OTTERSON thought there was a physiological point of view from which to consider the question of the unwholesomeness of milk. So far as the abstraction of cream or the addition of water is concerned, it is really a matter of very little importance, provided it is not carried to the extent of starvation; whereas, this question of physiology is one of very great importance. He referred to the condition of the animals, and their treatment during the time when the milk is drawn from them. All the gentlemen present were familiar with the effects of the emotions upon the milk of a nursing woman. We have seen the most deplorable effects therefrom. The same obtains among the lower animals. Kind treatment will result in the production of a better quality of milk than when cows are treated harshly. The effect of hurrying cows home from the pasture, by farmers' boys on horseback, perhaps to escape the rapidly approaching shower, is a practice the effects of which no one can tell; but no doubt the practice is productive of much injury; still, it is something far beyond our reach, and its detection is no doubt beyond the reach of chemistry. The same might be said of the deplorable practice of abusing cows in stables; still, he had no doubt that in many cases its effects are the same as, or similar to, the effects of emotions on nursing women.

The Doctor closed by referring to the question of memory among animals, and related an instance pointing strongly to their capacity for revengeful sentiments, as well as for the memory of cruel treatment.

MEDICAL CHARITIES AND MEDICAL MEN.

BY B. A. SEGUR, M.D.

I.—Brooklyn has grown in a very few years to be a very large city—more than half a million of inhabitants. The exigencies of a fast-growing population have exceeded our resources as a community, and our large municipal debt will represent to our successors the cost, in part, of the buildings, streets, parks, bridges, and various public works already undertaken. Schools, churches, libraries, are among the manifold demands upon this generation, which has to found and sustain these institutions with little aid from accumulated resources.

Brooklyn has undertaken, in a manner, to supply the necessary institutions to aid the sick poor. How far it has succeeded, in comparison with other and older cities, whose hospitals and other medical charities have a share in, and are an honor to, their accumulated and increasing riches; to what extent our medical charities are able to meet the legitimate demands upon them; and what just demands and relative importance medical, among other charities, have for the general public—are topics which concern us, as medical men, in many ways. I think the profession should study the situation, namely, the needs of our hospitals, as well as the magnitude of the relief required by the sick poor in Brooklyn; and it seems to me that it is very desirable that the medical profession in Brooklyn should have, if you please, an expert opinion—I hope a united one—on the great question of medical relief and hospital aid for the sick poor, and on the claims of medical charities on the services and financial support of the lay public, as well as on the gratuitous services of the physicians who attend the hospitals and dispensaries; and a further decided opinion to give, when opportunity offers, to any rich man who wishes to make donations or legacies, as to the comparative value of existing agencies of medical relief, whether compared with each other or with a possible new foundation.

II.—EXTENT OF AND PROVISION FOR MEDICAL RELIEF IN LONDON.

The Statistical Society of London reports as follows: “The fourteen general hospitals of the metropolis admitted into their wards, in the course of a year, 33,453 in-patients, and treated as out-patients and casual sufferers, 313,061 more.

“The thirty-six special hospitals and asylums received in the year 12,355 in-patients, and treated 56,068 out-patients, and including 19,636 patients not distinctly specified as in or out-patients—a total of 88,059.

"The general and special hospitals, taken together, received 45,808 in-patients, and treated 369,129 out-patients, making a grand total of persons relieved of 434,573.

"In addition to the above, the 42 general and 18 special dispensaries, taken together, give a return of no less than 232,878 patients treated either at their own homes, or at the institutions themselves, in the course of the year.

"It results, from this universal diffusion of charity, that there is not a disease that can afflict human nature, nor a want which the varying condition of mankind can require, nor any one of the manifold visitations of adversity, in poverty or distress, but finds an open asylum, a resort ready prepared with every needful accommodation for reception, entirely free of expense."

Another authority states that in London there are 6,000 beds in the hospitals, and that one in four of the population receive annually gratuitous medical treatment; in Liverpool the proportion is stated to be one in two.

So much for the extent of medical relief in London. Next consider its cost and its means of support. The writer already quoted states as follows:

"GENERAL HOSPITALS."—"The fourteen institutions belonging to this class possess an income from realized property to the amount of 109,687*l.*; annual subscriptions amount to 17,091*l.*; their donations to 16,636*l.*; their legacies to 10,206*l.*, and their miscellaneous sources of income to 1,996*l.* The total income of all these hospitals, from every source, is 155,616*l.*

"SPECIAL HOSPITALS."—"There are thirty-six of these institutions, possessing an aggregate income of 117,218*l.*, exclusive of 79,988*l.* poor-law relief. Of this sum of 117,218*l.* endowments and realized property yield 27,140*l.*; annual subscriptions, 12,081*l.*; donations, 28,702*l.*; legacies, 18,993*l.*; miscellaneous sources of income, 15,385*l.*, and sales and contributions by patients or their friends, 11,333*l.*"

"It will be seen that the income of the general and special hospitals taken together amounts to 155,616*l.*, added to 117,218*l.*, or 272,834 'pounds,' about \$1,360,000."

Forty-two general dispensaries and eighteen special have an income, taken together, of 29,064*l.*

"NURSES' TRAINING INSTITUTIONS."—"These useful institutions, which are auxiliary to our hospitals, have an income of 4,740*l.*, derived chiefly from payments made by wealthy persons for the services of the nurses trained by the institutions."

Then follow amounts paid for pauper lunatics, 79,988*l.*; for vaccination, 4,229*l.* for poor-law medical relief and other sums.

Of the whole, the summary is, "the annual income of the several medical charities is 423,668*l*.

TABULAR STATEMENT.

General Hospitals.....	£155,616
Special Hospitals.....	117,218
Total Hospitals.....	£272,834
General Dispensaries.....	£21,000
Special Dispensaries.....	8,064
Total Dispensaries.....	£29,064
Nurses' Training Institutions.....	£4,740
Samaritan and other funds.....	1,882
Total voluntary contributions.....	£308,520
Total raised by rates (taxes).....	113,056
Grand total of voluntary contributions and rates.....	£421,576

"Of the charitable contributions, properly so called, about 142,000*l*. is derived from realized property about 41,000*l*. from annual subscriptions; about 52,000*l*. from donations; and about 31,000*l*. from legacies."

"If the population of the metropolis be taken at 2,500,000, the voluntary contributions to our medical charities, including the income derived from realized property, will be at the rate of somewhat less than 2*s*. 6*d*. per head."

The subscriptions, legacies and donations, taken together, amount to about 1*d*. per head.

I have made the foregoing extended quotation of the statements of the writer of the article on the Hospitals in Holmes' System of Surgery, J. R. Martin, because, as Dr. Farr says, "the most general view of the public and charitable institutions of one of the greatest cities in the world cannot fail to be as useful as it is interesting."

III.—EXTENT OF AND PROVISION FOR MEDICAL RELIEF IN BROOKLYN.

The data of London hospitals applied to Brooklyn would require as follows: Two (2) hospital beds to every 1,000 of population, would give us between 1,000 and 1,200 beds. I think we have about 750. 33,453 in-patients in the general hospitals, and 12,355 in the special, would be 45,808 in-patients in all the hospitals, about 8 patients to every bed annually. That would give our hospitals (if they could receive so many), from 8,000 to 10,000 patients annually. About 6,600 were reported as treated in 1881.

The out-patients of the hospitals (I suppose patients treated at their own homes) were in number 369,129; of the dispensaries, 232,878 treated either at their own homes or at the institutions themselves in the course of the year.

Taken together the aggregate is 602,007, or more than 1 in 5 of the total inhabitants. The ratio would give us about 100,000 to be treated in our dispensaries, which is singularly near the actual returns in 1881, and shows the social conditions and wants of the poor sick are much the same in the two cities, and suggests the observation that the dispensaries, being a free service, fully supplies the wants of the city, while the hospitals, not being free, do not receive patients enough to occupy the beds they have.

The following table shows the number of beds, of patients, etc., of the five large hospitals of Brooklyn for 1881, in order of number of beds:

	1	2	3	4	5
1. Brooklyn City.....	150	664	15,811	44	30
2. Long Island.....	140	1943	17,662	49	35
3. St. Catherine's.....	132	1971	45,625	125	95
4. St. Peter's.....	92	1205	29,416	80	87
5. Homeopathic.....	60	326	10,805	30	50

1. Total number of beds in hospital.
2. Total number of patients admitted in hospital.
3. Number of days of treatment given in the year.
4. Average of beds occupied every day in the year.
5. Percentage of beds occupied every day in the year.

That public provision for the sick-poor is inadequate in this city, every physician knows who has spent valuable time, in some exceptionally pressing case, to find a free bed in any hospital for his patient.

But in the nature of the case it is plain we must grow up to the standard of London in this matter. Sickness in a large population is a constant quantity. Dr. Farr says:

QUANTITY OF DISEASE.

"In determining the quantity of sickness and the attacks of disease, the slighter affections are therefore passed over."

Of the severer cases, putting a stop to labor:

"Men placed in the same circumstances appear equally liable to an attack of sickness between 11 and 60 years of age; one hundred of the London laborers, in each of the decennial periods, 20-30, 30-40, 40-50, 50-60, had nearly 23.5 attacks of sickness annually; the highest was 26.4, the lowest 22.4."

TREATED IN HOSPITALS.

Dr. Farr, speaking of the public institutions of London, says that in the quarter ending 31st March, 1850, which may be taken as a fair average, "there were 3,067 in hospitals for treatment of common diseases, 3,849 in lunatic asylums; 1 in 726 of the inhabitants in hospitals, 1 in 578 in lunatic asylums."

FINANCES.

The comparison of the financial statistics of London and Brooklyn, in respect to hospitals, must be brief. In the first place, the Brooklyn hospitals and dispensaries do not make, as a rule, any statement of their income or disbursements. But I suppose it is true, that beyond the fifty to sixty thousand dollars which the city raises by taxes and gives to the hospitals and dispensaries, these institutions have almost no endowments, subscriptions, donations or legacies. Probably \$30,000 would be more than the annual income from all these sources of private voluntary charity.

It follows, then, that we cannot have free beds in our hospitals, and that if the idea of a hospital is an endowed and charitably supported institution, we have almost nothing in Brooklyn illustrating that beneficent agency of an improving social organization.

I conclude that, in view of the existing financial situation of the medical charities, and the legitimate work which a Christian civilization undertakes in order to secure the best and most suitable aid in cases of sickness, the medical men in Brooklyn should not remain content with rendering a vast amount of gratuitous professional service in the medical charities, but should also be prepared to exercise a legitimate influence upon the development, administration and support of the hospitals, etc., and upon the general public in these regards.

At this time I have not ventured to go into particulars in this important matter; my present object will be attained if the Society shall, in the discussion of the subject, elicit a more full and complete statement of the information and opinions of its members.

THE MEDICAL SOCIETY OF THE COUNTY OF KINGS.

A stated meeting of the Society was held on the evening of Tuesday, May 16th, 1882, the President, Dr. Jewett, in the chair. The meeting was called to order at 8.15. About 30 members present. Dr. G. W. Wells acted as Secretary.

Almon S. Allen, M.D., No. 40 Lee Avenue, was proposed for membership by Dr. G. W. Baker.

DR. E. H. BARTLEY read a paper entitled "Rapid Methods of Testing Milk," with demonstrations.

It was briefly discussed by Drs. Raymond and Otterson.

DR. B. A. SEGUR read a paper entitled "Medical Charities and Medical Men."

On motion of Dr. Thayer, seconded by Dr. Stuart, the subject was made the special order for the June meeting, and Dr. Segur was requested to open the discussion.

THE PRESIDENT declared the following to be duly elected to membership :

Drs. T. J. Wheedon, A. J. Wolff, G. R. Buller, and J. F. McEttrick.

On motion, the Society adjourned.

Ἀσκληπιὸς



ὁ Σωτήρ

Χάρμα μέγ' ἀνθρώποισι, κακῶν βελκτῆρ' ὀδυνῶν.

Hymn of Homer, No. XVI.

PROLIFERATIONS.

—GEORGE FLETCHER, M. D., died May 21, at 88 Penn Street, E. D., aged about 66 years. His fatal illness, by pneumonia, lasted but six days. He was a native of England, and a graduate from St. John's College, Cambridge. He came to this city about thirty-two years ago. He was an alumnus of the Long Island College Hospital.

—THE REDUCED FARE for Delegates to the A. M. A. is \$12.50 from Chicago and return. Secretary Atkinson will supply a circular giving details.

—PURE FRUITS.—In 1880 we called attention to the admirable pure food articles prepared by Mrs. McElrath, of 393 Degraw Street. Since that notice, we are informed, not a few physicians have caused them to be ordered for suitable cases and for their home use. A depot for these articles has been established at the Woman's Work Exchange, No. 122 Atlantic Street, where samples may be seen.

—THE MIDDLEMORE PRIZE IN OPHTHALMOLOGY.—We are requested to remind intending competitors for this prize that all essays must be forwarded by the 31st of May next, under cover, with a sealed envelope bearing the motto of the essay, and containing the name and address of the author, addressed to the General Secretary of the British Medical Association, 161A, Strand, London. The amount of the prize is £50; and the subject of the essay is, "The Scientific and Practical Value of Improvements in Ophthalmological Medicine and Surgery made or published in the past three years."

—THE REGULAR MONTHLY MEETINGS of the Medical Society of the County of Kings are held at 8 P.M. on the third Tuesday of each month, at Everett Hall, 398 Fulton Street.

The June meeting will be held on the 20th, at which will occur the Discussion on Medical Charities.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

OFFICERS AND COMMITTEES FOR 1882.

<i>President</i>	C. JEWETT, M.D., 307 Gates Ave.
<i>Vice-President</i>	G. G. HOPKINS, M.D., 375 Grand Ave.
<i>Secretary</i>	R. M. WYCKOFF, M.D., 532 Clinton Ave.
<i>Assistant-Secretary</i>	W. G. RUSSELL, M.D., 165 So. 9th St., E. D.
<i>Treasurer</i>	J. R. VANDERVEER, M.D., 301 Carlton Ave.
<i>Librarian</i>	T. R. FRENCH, M.D., 469 Clinton Ave.

CENSORS.

B. A. Segur, M.D., 281 Henry St.	R. F. Westbrook, M.D., 174 Clinton St.
A. Hutchins, M.D., 796 De Kalb Ave.	A. R. Paine, M.D., 485 Clinton Ave.
J. D. Rushmore, M.D., 129 Montague St.	

DELEGATES TO THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

(1878 to 1882.)

Drs. J. C. Shaw, C. Jewett, T. R. French,	Drs. G. G. Hopkins, J. A. McCorkle, A. Sherwell, J. H. Hunt.	Drs. J. Byrne, B. F. Westbrook, G. W. Baker,
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Chap. XI., Art. 2, of By-laws: "Any Member elected as Delegate to the Medical Society of the State of New York, who shall be unable to act as Delegate during two successive years, shall be considered to have vacated his position as Delegate."

DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION,

ST. PAUL, MINN., TUESDAY, JUNE 6TH, 1882.

Drs. J. S. Andrews, S. G. Armor, G. W. Baker, H. L. Bartlett, John Byrne, A. W. Catlin, Alex. S. Clarke, L. C. Gray, Alex. Hutchins, J. C. Hutchison, E. A. Lewis, W. H. Martin, A. R. Matheson, A. Mathewson, J. B. Mattison, J. A. McCorkle, Andrew Otterson, A. R. Paine, Ernest Palmer, J. S. Prout, W. H. Rand, J. H. Raymond, H. N. Read, W. W. Reese, J. D. Rushmore, W. G. Russell, J. C. Shaw, A. J. C. Skene, E. R. Squibb, Jerome Walker, R. L. Van Kleek, Wm. Wallace.

COMMITTEES OF THE SOCIETY.

HYGIENE.

Drs. B. F. Westbrook,	N. B.Sizer,	D. E. Chace.
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THERAPEUTICS AND CLINICAL MEDICINE.

Drs. J. A. McCorkle,	A. Hutchins,	E. H. Bartley,	A. R. Paine,	A. R. Matheson.
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OBSTETRICS.

Drs. J. R. Vanderveer,	A. S. Clarke,	E. Palmer,	W. Wallace,	B. A. Segur.
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SURGERY.

Drs. A. J. C. Skene,	J. S. Wight,	G. R. Fowler,	J. D. Rushmore,	P. L. Schenck.
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REGISTRATION.

Drs. J. A. Jenkins, A. S. Clarke,	Drs. W. G. Russell, Z. T. Emery,	Drs. F. W. Rockwell, A. Haslett.
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PHYSICIANS' MUTUAL AID ASSOCIATION.

Drs. W. W. Reese, N. W. Leighton,	B. A. Segur, A. L. Bartlett,	A. Hutchins, S. H. Olmstead,	J. A. Jenkins, A. W. Catlin.	R. M. Buell,
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PROCEEDINGS
OF THE
MEDICAL SOCIETY OF THE COUNTY OF KINGS.

VOL. VII.

JULY, 1882.

No. 5.

AN APPARATUS FOR THE ADMINISTRATION OF
ETHER.

BY J. C. HUTCHISON, M.D.

The ether inhaler, to which I beg leave to call attention, consists of three essential parts: (1.) A tin tube for holding a sponge for the ether, three and a quarter inches long and two and a quarter inches in diameter; one end is left open, to be covered by a muslin bag; the other is closed, with the exception of an opening at its upper part, one inch in diameter, into which is inserted a tube for attaching a rubber hood. This tube projects backward three-fourths of an inch, and is then carried downward at a right angle to a level with the lower margin of the sponge tube. This arrangement prevents the liquid ether from running down upon the patient's face or mouth. There is an opening in the centre of the top of the large tube one inch in diameter, having a neck half an inch long, which is closed by a cork; through this opening the ether is poured upon the sponge without removing the mask from the patient's face.

(2.) A rubber hood, such as is used by dentists and others in administering nitrous oxide gas; it is soft and pliable, fits accurately over the mouth and nose, and may be so adapted to any face as to completely exclude the air.

(3.) A muslin bag, similar to the one advised by Dr. Squibb; it is pear-shaped, eleven inches long and eight or nine inches wide at its

widest part, having a capacity of forty or fifty inches—more than is necessary for full inspiration. The neck of the bag fits closely over the open end of the sponge tube, and has a slit an inch and a half long at its mouth, to the corners of which tapes are attached, for the purpose of tying it tightly around the opening through which the ether is poured, so as to prevent the entrance of air at this place. The bag should be made of close material, and when it is wet with water, it is impervious, or nearly so, to air or ether vapor.

MODE OF USING THE INHALER.

When about to be used, the large tube is filled with a piece of coarse sponge of proper size and shape, which has been previously wet with water and thoroughly squeezed. The bag is then wet and squeezed, so that it does not drip, and secured over the mouth of the tube. The sponge will hold two ounces of ether, which should be poured upon it through the opening on top of the tube containing the sponge. In most operations the first charge of ether is all that is required, and in many, half the quantity mentioned is quite sufficient. The rubber hood is applied accurately over the mouth and nose, but the opening through which the anæsthetic is poured is left uncorked until tolerance or partial anæsthesia of the mucous membrane of the air passages is established, as indicated by deep inspirations. Free dilution of the ether vapor with atmospheric air when its administration is first begun, prevents, in a measure, the coughing and strangling that is liable to occur from the sudden application of the concentrated vapor.

The bag ordinarily lies upon the upper part of the chest, but in operations about the neck and upper part of the body, it may be placed to one side or the other, or upward over the face, by turning the sponge-holder on the rubber hood, the latter retaining its position.

THE ADVANTAGES OF THE INHALER.

The advantages which the writer believes this apparatus possesses are:

1st. The mechanical act of respiration is entirely free—"the lower end of the bag rises and falls with the respiration without offering any practical obstruction to the mechanical process" (Squibb), and the breathing can be closely watched.

2d. No part of the instrument is liable to become soiled by expectorated or vomited matters, except the rubber hood, and this is easily cleaned—an advantage of no small importance for the antiseptic days. But it is better to throw the whole apparatus into a basin of water after each inhalation, to free it from the products of respiration. *No inhaler* should be used a second time without being thoroughly cleansed.

3d. The apparatus economizes ether, the first charge (two ounces) being usually sufficient for a long operation; it prevents, in a great measure, the vapor from permeating the apartment, and affecting the comfort of the operator and his assistants, and especially the anæsthetizer, who often suffers from inhaling a large quantity of the vapor himself.

4th. It is simple in its construction, having no valves, and is inexpensive and portable.

The apparatus, together with a bottle or tin can containing four or six ounces of ether, may be carried in a tin case 9 inches long and $3\frac{1}{2}$ inches in diameter, divided by a diaphragm in the middle—one side of the case for the ether bottle and rubber hood and the other for the tin tube (the sponge being placed inside of it) and the bag.

ANNUAL MORTALITY IN BROOKLYN IN 1881.

BY R. M. WYCKOFF, M.D.

During the year 1881, the total number of deaths in this city was 14,533, an increase of 1,311 deaths as compared with the record of the year 1880. From this total is excluded the number of still-births, of which 975 were reported. The total number of births reported was 10,893, and of marriages, 3,935. In respect of the three records last mentioned, it is necessary to state that they are incompletely returned, whereas the returns of mortality are regarded as full and accurate. The estimated population in 1881 was 585,220; on this, as a basis, we find that the annual death rate was 24.83 per 1,000 persons living, while the death rate in the preceding year was 23.33. There was, therefore, not only an actual but also a proportional increase of mortality. The death rate has risen in each year since 1878, when the rate reached low-ebb, as expressed by the rate of 20.85 per 1,000 persons living, that being the lowest rate experienced in this city since mortality registration became trustworthy and complete.

A comparison of the total mortality during recent years, the population at the time of the census enumerations of 1880 and 1875, and for the years intervening between them, estimated on the basis of an annual increase at the rate of 3.27 per centum, is afforded by the accompanying tabulation:

YEARS.	DEATHS BY ALL CAUSES.	YEARLY DIFFERENCES.	POPULATION, CENSUS OR ESTIMATE.	DEATH-RATE PER 100.
1881	14,533	1,311 +	585,220 E.	24.83
1880	13,222	1,653 +	566,689 C.	23.33
1879	11,569	494 +	548,500 E.	21.09
1878	11,075	287 —	531,100 E.	20.85
1877	11,362	972 —	514,300 E.	22.09
1876	12,334	136 —	489,300 E.	25.20
1875	12,470	1,459 +	482,493 C.	25.84
Average of } 10 years. }	12,118	505,557 E.	23.97

The rate of annual growth of the city, stated above at 3.27 per centum, is obtained by a logarithmic calculation of the difference between the totals given by the State census in 1875 and by the Federal census of June, 1880. Although this may appear a high rate of increase, it is not excessive; that this is true, may fairly be argued from the fact that a similar computation, based on the last two census enumerations of the General Government, affords an increase of 3.64 per cent. per annum. This discrepancy is explained by reason of the different conditions, especially as to the season of the year, under which the respective census are taken; the Federal count being made somewhat later in the year than that made by the State, and after the summer exodus of the citizens has commenced. In order that an overestimate may not be made, the lower increment-ratio is elected to be used for the estimates of population. Even at this lesser rate of growth, our city stands in a prominent place among the populous cities of the world, being the third in size in the Union, the fourth among the English-speaking peoples of both continents, and the eighth in Christendom. In the New World only New York and Philadelphia exceed us; while in Europe only five are larger, namely, London, Paris, Berlin, Vienna and St. Petersburg. Of these cities the death rates were as follows in 1881: London, 21.2 per 1,000 inhabitants; Paris, 28.6; Berlin, 27.6; Vienna, 29.0, and St. Petersburg, 51.4; all of which, with the exception of that of London, were higher than our own. New York had for its rate 31.0 per 1,000, while Philadelphia's was quoted at 22.5 per 1,000. There are four other cities, whose population, known to be in excess of half a million in 1881, that supply the data for the computation of a death ratio for that year, thus: Bombay, with a population of 644,405, had a rate 33.7 per 1,000; Liverpool, with 554,073, had 26.7; Glasgow, with 512,034, had 25.3 per 1,000, and Chicago, with 503,304, had 27.2 per 1,000 as their respective rates of mortality. Of the cities of 400,000 population and under

500,000, there are the following whose rates are known, as follows : Calcutta, 30.1 ; Brussels, 23.9 ; Hamburg, 24.5 ; Madrid, 37.4, and Birmingham, 20.0. The last-named city's mortality is the lowest in this list of the sixteen great centres of population ; next stands that of London, then Philadelphia's ; the fourth is Brussels, and the fifth in the upward grade is Brooklyn. The figures for the English and American cities have a greater degree of certitude than some others, for the reason that a census has been taken in them in years 1881 and 1880. The plan of death registration varies very greatly in the cities of the above list, but for the purpose of this citation it is assumed that it is equally reliable in all.

In making comparisons between the mortality rates of European and American cities, it is necessary to bear in mind the climatic disparities that exist. Let it be remembered how intensely lethal becomes the influence of midsummer heat, in this country, upon the very young, by reason of the enteric affections that are peculiar to that season, and how relatively free from such affections are the trans-Atlantic cities, as shown by the single fact that the text-books, describing the diseases incident to them, seldom recognize the existence of "cholera infantum." Although their cities are densely overcrowded, as compared with the majority of those on this side of the water, their diarrhoeal mortality never assumes the vast proportions that here, every summer, set in and assist in elevating the average annual death-rates in a manner that effaces the general effect of the lower and not excessive rates of the other three more healthful seasons of the year. In other words, the American annual rates are handicapped by the deadly influences peculiar to our midsummer climate, manifested in those grave and often rapidly fatal affections of the bowels, variously named as cholera infantum, entero-colitis, acute gastrointestinal catarrh, summer complaint, infantile diarrhoea, etc., and that sweep away vast numbers of children under five years of age. So long as these influences continue, an allowance must be understood and supplied as to the annual rates of communities that exist under such differing conditions, whenever a comparison is made. That these influences may be at some time baffled or combated and reduced is the hope, as it is the problem, of those whose duty it is to endeavor to repress the preventable causes of disease. When that shall have been done, a comparison on a just basis may be made of the relative mortalities of European and American cities, as expressed in the annual rates.

Some of the principal causes of Brooklyn mortality in the year 1881: the number of deaths by small-pox was 35, while in 1880 there were but 2 deaths in the city. The deaths by this disease among the cases that were removed to the County Hospital, located at Flatbush, are not included in the above total, since they occurred beyond the city limits.

Diphtheria caused 1,169 deaths, an increase over the number of the previous year of 51. The deaths by scarlet fever were 651, an increase of 429; by measles 56, a decrease of 100; by whooping cough, 118; by croup, 438; cholera infantum caused 1,028 deaths; all diarrhoeal diseases, under five years of age, 1,493, and at all ages, 1,707; cerebro-spinal meningitis, 17; typhoid fever, 99; erysipelas, 70; malarial fevers, all kinds, 306; intemperance and delirium tremens, 91. By certain of the other more prominent causes, the number of deaths were: Rheumatism, 71; cancer, all locations, 252; marasmus, 536; consumption, 1,754, an increase of 18; tubercular meningitis and hydrocephalus, 170; meningitis (not certified as tubercular), 450; apoplexy, 288; convulsions, chiefly among children less than one year old, 272; sunstroke, 48; all diseases of the nervous system, 1,638; diseases of the heart, 529; bronchitis, 471; pneumonia, 1,022; all diseases of the respiratory system, 1,704; Bright's disease, 321, an increase of 147; puerperal diseases, 166; old age, 303; infantile asthenia and premature birth, 315; suicide, 55; homicide, 18; in public institutions, 774; the number of inquest cases, exclusive of cases of still-births, was 1,023.

By the five principal classes of causes of death, the number of decedents was: I. Zymotic class, 4,952. II. Constitutional class, 2,909. III. Local class, 5,113. IV. Developmental class, 1,157. V. By violence, 402. By seasons, the record was: In the first quarter, 3,410; second, 3,123; third, 4,458; and fourth, 3,537. By sexes: Males, 7,240; females, 7,293. By nativity: Born in the United States, 10,511; foreign born, 4,022; the native males were 5,280; females, 5,231; foreign males, 1,960; females, 2,062; colored persons, 311. By age periods: under one year of age, 3,633; under five years of age, 6,865; from five years to ten, 929; ten years to twenty, 586; twenty to forty, 2,180; forty to sixty, 1,984; sixty to 100, 1,987; and above one hundred, 2. By social condition: Married, 3,428; single, 9,542; widows, 1,106; widowers, 356; and not known, 40. Of the deaths by suicide, 46 were males and 9 females; only one was a colored person; married, 27; single, 19; widows, 2; widowers, 4; and not known, 3; the native born were 19 in number; foreigners, 36.

A CASE OF CARCINOMA OF THE STOMACH.*

The case of N. McGregor Steele has excited considerable attention from the publicity which the patient himself gave it by writing a letter to the *Brooklyn Eagle*. This letter was commented upon so freely in the daily press and in private circles, that we have thought it advisable to publish the history and record of the autopsy, as presented to the Pathological Society by Drs. C. H. Terry and B. F. Westbrook.

The complete history of the case was somewhat difficult to obtain, owing to the fact that he was not under the care of any one physician during his whole illness; but the following is believed to be a pretty accurate history: The patient was a lawyer, forty-six years of age. About two years ago he began to suffer with dyspeptic symptoms; at first a mere uneasiness after eating, but it did not seriously affect his health until about one year ago. About a year ago he noticed that his health was failing, and he was losing flesh. He soon became unable to attend to his business, and consulted a physician. As he did not improve in health he consulted Dr. Willard Parker, of N. Y., in the month of Sept., 1881, who pronounced his trouble gastritis. In November Dr. Goldsmith, of Rutland, Vt., examined him, and pronounced it a case of gastritis, or ulcer of the stomach. In January, 1882, Dr. J. C. Peters, of N. Y., saw the patient and agreed with the above diagnosis. It seems that up to Jan., 1882, his symptoms were pain after eating referred to the regions of the stomach and back, opposite the epigastric region, with rapid emaciation. He did not vomit, and could eat light farinaceous food in small quantities, but many articles had to be avoided. In Feb., 1882, he took a trip to Europe. He consulted a physician in Italy, who made a probable diagnosis of cancer of the stomach. He returned home on the 10th of April, and was seen by Dr. C. H. Terry on the 11th, who found him very much emaciated and suffering from the lancinating pain in the region of the stomach, usually attending carcinomatous disease, which pain was also referred to the back.

He did not vomit, but suffered great pain after taking food, for about three hours. There was no marked cachexia. A tumor could be felt in the epigastric region just below the ensiform cartilage. At this time the diagnosis of cancer was made, and the use of hypodermic injections of morphia begun, which relieved his distress, at first, for about twenty hours after each injection.

* Reported from the proceedings of the Brooklyn Pathological Society for June 22d, 1882.

A few days later, Dr. Alonzo Clark, of N. Y., saw him, and made the diagnosis of fibroid infiltration of stomach, or *possibly* cancerous deposit in the omentum, but rather inclined to the former opinion.

About one week later, Dr. Loomis saw him in consultation with Dr. Terry, and from the immobility of the tumor believed that the left lobe of the liver, transverse colon and stomach, were agglutinated together, and gave his opinion in favor of either cancer or fibroid thickening of the walls of the stomach, with a fatal prognosis. Not yet satisfied, the patient sent again for Dr. Goldsmith, who made a positive diagnosis of cancer of the stomach. In the meanwhile, the patient was treated by hypodermic injections twice daily, which kept him comfortable, and by a light diet consisting of milk, raw oysters, rice, meat juice, etc. As might be expected, the emaciation and loss of strength continued, and about the middle of May, an irregular was called in, who "scouted the idea of cancer," and made the diagnosis of "thickening of the coats of the stomach," and informed the patient that "in his practice he had been able to cure two out of three of such cases." The patient, however, continued the use of the hypodermic syringe, and on May 17th wrote a partial history of his case for publication in the *Daily Eagle*, claiming a great disagreement among those who had examined him, and offering a reward for a correct diagnosis and a cure. As might be expected, various diagnoses and methods of treatment came pouring in, but on the morning of June 18th, Dr. Terry was again called in, who found him in a moribund condition. He died the same day, and the autopsy was made by Dr. B. F. Westbrook, whose report in presenting the specimen to the society is as follows:

AUTOPSY.

Body emaciated and skin slightly yellow.

Costal cartilages calcified.

Lungs emphysematous.

Right lung, gray hepatization of two-thirds of lower lobe.

Left lung, hypostatic congestion of lower and posterior portion.

Pleura, normal.

Pericardium, normal.

Heart small, weight eight ounces.

No changes noted in great vessels or intra-thoracic lymph glands.

Abdomen, flat, except in epigastrium, where it was sufficiently prominent to attract notice, and where a hard mass could be readily palpated.

The peritoneum was normal, except over the diseased portions of stomach and gastro-colic omentum. In this locality it was opaque.

The position of the viscera was normal, the only deviation being a displacement of the pylorus to the left, about one inch.

A cancerous growth occupied the entire lesser curvature of the stomach and encroached upon its anterior and posterior aspects, about three inches. It involved the entire circumference of the pyloric extremity, up to the point where its width exceeded three inches.

The inner surface corresponding to this region was the seat of an enormous ulcer, with thick everted edges and grayish necrotic base.

A large quantity of slate-colored fluid containing many black flocculi was found in the fundus. There was no apparent disease of either œsophagus or duodenum.

A large lobulated mass was found below the stomach, in the attached border of the omentum, and similar masses lay in the transverse mesocolon and upon the anterior surface of the aorta, extending on either side as far as the hilus of the kidney.

The head of the pancreas was concealed in this mass. It was thin, flabby, and apparently atrophied from pressure.

The liver was small, pale and fatty. The bile ducts showed no occlusion. The spleen was in its usual position behind the stomach, and normal in appearance.

No other diseased conditions were noted. The cerebro-spinal axis was not examined.

COMMENTS.

It will be seen that the history of this case is not an unusual one, except in the fact that it excited an unusual interest among the laity, owing to the peculiar letter written to the press by the patient, while under the influence of a hypodermic injection of morphia.

Previous to his voyage to Europe, the disease had not developed sufficiently to reveal its true nature. After his return the diagnosis lay between fibroid thickening, and thickening of the walls of the stomach by cancerous deposit. The prognosis in all cases, except one, and that of an irregular, was the same—necessarily fatal. When we consider the very slight difference between scirrhus cancer and fibroid infiltration of the walls of the stomach, the disagreement in this case seems almost to vanish.

F. H. BARTLEY, M.D., *Secretary Pathological Society.*

THE MEDICAL SOCIETY OF THE COUNTY OF KINGS.

A stated meeting was held on the evening of Tuesday, June 20, 1882. The President, Dr. Jewett, in the chair, and about fifty members present. The minutes of two previous meetings were read and approved.

The following named gentlemen were proposed for membership: Drs. J. L. Kortright, 93 Taylor St., E. D., by Dr. Russell; Robert Scrimgeour, 316 Tenth St.; F. L. R. Tetamore, 454 Marcy Ave.; H. C. Murphy, 97 Third Place; R. L. Dickinson, 124 Bedford Ave.; I. H. Platt, 450 Clinton Ave.; James J. Keane, 556 Clinton St.; G. R. Barnes, 65 Putnam Ave.; John Rankin, 294 Sumner Ave., and William J. Doyle, 149 South Elliot Place, by the President.

The council reported acceptance to membership of Almon S. Allen, M.D., Albany Med. Coll., 1872, and A. M. Fernandez, M.D., N. Y. University, 1881.

THE PRESIDENT stated that, in pursuance of a resolution passed at the last meeting, the subject for the evening's discussion was Medical Charities, or, more properly, the Hospital Charities of the city. Reports from the various hospitals would first be presented as a text for a general discussion. The object of the discussion was to awaken a wider interest in the hospital charities of the city, and to bring out their defects, especially in relation to the care of the sick poor. Another subject of importance, and one which it seemed eminently proper that this Society should notice, was in relation to the recent action of the Society of the State of New York in the matter of the Code of Ethics. It seemed to him that the Medical Society of the County of Kings is inclined to be too negative in regard to these matters. Our neighbors across the river are more active. They go to Albany on a question of the enactment of a law against quacks; then again they go to Albany and legalize consultations with irregular physicians. He thought, therefore, it was time for this Society to set themselves right on the record. Therefore, he had ventured to bring the matter up. It seemed eminently proper that district societies should concern themselves with public medical questions. Indeed, he thought such societies should exercise a controlling influence in public medical matters. If this Society should bring such subjects more frequently before them for discussion, it would add greatly to their proper disposal and to the influence of this body.

Later in the evening the following resolution was adopted:

Resolved, That the question of the rejection or adoption of the Code of Ethics by the State Medical Society at its last meeting, be considered by this Society at its October meeting.

DR. SQUIBB called attention to the fact that the terms of office of the two members of the Board of Pharmacy, to which this Society is entitled, was about to expire. Another election to fill the vacancies thus caused was necessary. With the consent of the chair, he moved that the said election be held at this stage of the meeting. The motion was carried.

DR. SQUIBB then renominated Drs. J. D. Rushmore and Audley Haslett, who had filled the office for the last two years. The nominations were accepted, and the gentlemen re-elected to serve during the coming term.

Reports from the various hospitals were then made as follows: From St. Peter's, Dr. Avery Segur; St. John's, Dr. G. G. Hopkins; St. Mary's, Dr. John Byrne (who made an extemporaneous report, and promised, if the Society so desired, to furnish further data. He was requested to do so by the President, for publication with this discussion). Long Island, by Dr. F. H. Stuart; St. Catherine's, Dr. J. Fuhs; Eye and Ear, Dr. J. S. Prout. Dr. Alexander Hutchins was unable to be present to report concerning the Brooklyn City Hospital; he however sent his paper by Dr. Segur.

Those who took part in the debate were Drs. Reese, Skene, and Segur.

The President announced papers to be read at the July meeting by Drs. Chace and Gray, and the meeting adjourned.

R. M. WYCKOFF, M.D., *Secretary*.

Ἀσκληπιὸς



ὁ Σωτὴρ

Χάρμα μέγ' ἀνθρώποισι, κακῶν θελκτῆρ' οδυναῶν.

Hymns of Homer, No. XVI.

PROLIFERATIONS.

—THE PUBLICATION OF THE Hospital discussion is deferred till fuller details can be collated and arranged.

—WE ARE GLAD TO ANNOUNCE the opening of an institution, at 232 Quincy Street, conducted on hotel principles, where physicians may send patients, retain charge of them during treatment, and is not intended as a charity. Further particulars may be had on inquiry at the institution.

—DAVID E. BREINIG, M.D., died at 344 Schermerhorn Street, on May 31, from cardiac dilatation. He graduated in medicine from the University of the City of New York in 1844. He was a resident of Brooklyn for eighteen years, during which time, for the most part, he was engaged in manufacturing occupations.

—DR. CARL H. VALENTINY died in Brooklyn on the 29th of May, at the age of 67 years. He was a native of Dortmund, Prussia, and a resident of this city during thirty years. He had suffered for about a year from atheromatous disease of the arteries, and later from hemiplegia of apoplectic origin.

—IN NEWCASTLE, England, a new kind of organization has been established, called the Invalid Loan Society, whose object is the lending of clothing, furniture and such other articles as will minister to the comfort of those who are both needy and sick.

—OPIUM HABITUÉS.—Attention is called to Dr. Mattison's advertisement on 3d page of cover.

—THE "GREEN-BOOK" for 1882-3 was ready for distribution May 31. This is the first time in its history that it has been out before June 1. It contains 490 physicians' names in the Brooklyn list, or 22 more than in last year's Register. The editor complains that our medicos are very remiss in attending to his call for information; only about half return the circulars, although he sends them out with post-paid envelopes.

If physicians find any omissions or errors, the blame thereof must not be charged to Dr. White.

—REVACCINATION IN LONDON.—The London papers have discussed at much length the results of revaccination, as exhibited in the case of between 10,000 and 11,000 persons permanently employed in the postal service, all of whom were required to undergo revaccination on admission to the service, unless that operation had been performed within seven years previously. Among these persons, according to the data now officially published, there has not occurred a single fatal case of small-pox, and in only ten cases non-fatal attacks, all of these being of a very slight character. On the other hand, it appears that in the telegraph department, where the enforcement of revaccination was not carried out with the same completeness, twelve cases occurred in the same period, among a staff averaging about 1,500; eight of these attacks were of persons not revaccinated, and one proved fatal, while the remaining four were of revaccinated persons, who all perfectly recovered without pitting.

—HINTS FOR THE PREVENTION OF DIPHTHERIA.—The State Board has recently had occasion to combat this disease at Arietta in the “Northwoods,” where it had never before appeared. The Board claims to have *stamped out* the disease there by the measures indicated in the following circular:

“Diphtheria is an infectious disease, readily spread by the sick and by clothing which has been about the sick-room. The room itself is apt to retain and spread the infection. It is to be avoided by great carefulness to have the sick and their clothing, and the persons who nurse the sick, kept entirely away from others, especially from children.

The sick must be nursed in a clean and airy room, on a floor where there are no other children.

Every cloth and cup, and all clothing and bedding used in the sick-room, must be cleansed and disinfected before other persons are exposed to them. The room itself must be disinfected as soon as the sick recover or die.

THE CLEANSING AND DISINFECTION.—Open windows, and open fire-places with fire in them day and night, protect the sick and all who attend them. The cloths and dishes used by the sick should be put into boiling hot water, as soon as removed, without being taken to another room. The soiled clothing of the sick and their beds that can be boiled, should be thrown into a disinfecting fluid, made by dissolving four *table-spoonsful of sulphate of zinc* (“white vitriol”), two *table-spoonsful of common salt* in a common pailful of boiling water. When the time for washing comes, boil the clothing, etc., before washing.

The woodwork, chairs and stools of the sick-room should be washed

with the disinfecting fluid. The chamber vessels and spit-cups used by the sick should be drenched with this fluid before they are removed from the room.

The grounds just about the house, the ditches and drains and the privy and chip-yard, must be drenched with the cheap solution of green copperas (sulphate of iron), made by dissolving five pounds of this dry copperas in a large pailful of water.

As soon as the sick-room is vacated let it be fumigated with sulphur (brimstone), and let all rugs, beds, blankets, and other furniture remain in the room and near where the kettles or pans of sulphur are placed. From two to four pounds of sulphur, or broken brimstone laid upon ashes and coals, will be necessary for fumigating an ordinary chamber. The physician will direct how to do this; but it will be well done if the rooms to be fumigated are so closed that the suffocating fumes do not escape from flues and crevices, and the burning ceases for want of fresh air before all the sulphur is consumed. Let the fumes be kept shut in all day. Next, let all plastered portions of the room be well lime-washed. Let the bottom and sides of cellars be sprinkled with fresh slacked lime.

The sick should be nursed by adult persons who have no children about them.

Children and visitors should keep away from the house where there is diphtheria. The burial of those that die should be strictly private.

It is a public as well as a family duty to apply these Sanitary Rules wherever a case of diphtheria occurs."

—PHTHISIS BY INHALATION.—The experiments of Tappeiner, in 1877, proved that dogs are rendered tuberculous by treating them with phthisical sputa administered regularly daily, by means of an atomizer, during a period of ten to twenty days. The same experimenter has recently completed similar administrations upon dogs with the pus taken from a scrofulous subject having suppurating glands; the results were negative, the lungs of the canines being found free from tubercles—a fact indicating the non-identity of scrofulosis and tuberculosis. Dr. T. also made a test of the sputum of chronic bronchitis; this was also found to be non-infecting.

—STUNG TO DEATH.—The *Herald*, in a late issue, states that a warehouse foreman in New York was engaged in overhauling some tobacco in a cellar, and as he turned his lantern upon the bale an insect darted out and stung him upon the neck. Three days later, the neck being decidedly swollen and painful, a physician was called in, who declared the affection to be malignant pustule. Death resulted six days after. The victim of this strange attack was in full health and prime of life, and of good habits. Is there any insect known

to be imported with the tobacco leaf that has so deadly a sting as to destroy life in six days? On the following day the same paper reported the death of a child from the bite of a rat: the death took place by tetanus, on the fifth day after the wound.

—THE HOME JOURNAL says of New York City: “And by night also the streets are safer than those of other large cities, and even than those of many towns of half the population. We have the testimony of professional ladies—and medical practitioners have given the matter a thorough trial—that young and comely women may traverse the city at all hours without obstruction or danger. Not only public streets, but narrow alleys among crowded tenement houses. For some years now it has been the custom for lady practitioners to go out on calls at night, and we have yet to hear of the first case of violent assault. The most serious rudeness experienced is some chance “barbaric yawp” from an elated poet reeling home from his too generous sacrifices to Bacchus. Even this “yawp” may be silenced, if the lady has patience to go a mile or two to find a policeman. Violence and lawlessness, it is true, abound in the city, but as between beauty and the beast, the latter seems to be the favorite victim.

The London *Times* declares that women of character dare not appear in the streets of that city after dusk, by reason of the frequency of insults and the inefficiency of the police. The same is true of the other chief European cities. It has been observed that wherever a large standing army is maintained, and orders of celibates form a considerable portion of the community, freedom for women is circumscribed. The general tone of manners towards the fair sex takes a lower range, although in certain aspects it assumes a show of exaggerated politeness. Such being the case it behooves our fair citizens to give their influence to preserve the regulations and customs which have yielded them such benefits, and to watch with jealous eye the adoption here of those foreign social fashions, the tendency of which is to limit their liberty and humiliate and imprison them, after the style of their sisters in the old world.”

Such is the language of one of our well-recognized “society” oracles, from editorial columns. It will be welcomed by many as showing that New York is in the advance as regards the “emancipation of the sex.” Of the safety of the streets of this city, at night, for lady practitioners, we have no reason to doubt; but this should be borne in mind, that the latter do not, as a rule, elect to live and move in those parts of the city where the hoodlum most abounds—that unmannerly element of cities is in excess in their low sections, and that, being all turned loose after night-fall, may sometimes behave lawlessly when the fear of the police is not before their eyes.

—THE USE OF AMMONIA IN BAKING POWDERS—ITS IMPORTANCE AS A CULINARY AGENT.—The recent discoveries in science and chemistry are fast revolutionizing our daily domestic economies. Old methods are giving way to the light of modern investigation, and the habits and methods of our fathers and mothers are stepping down and out, to be succeeded by the new ideas with marvelous rapidity. In no department of science, however, have more rapid strides been made than in its relations to the preparation and preservation of human food. Scientists, having discovered how to traverse space, furnish heat and beat time itself, by the application of natural forces, and to do a hundred other things promotive of the comfort and happiness of human kind, are naturally turning their attention to the development of other agencies and powers that shall add to the years during which man may enjoy the blessings set before him.

Among the recent discoveries in this direction, none is more important than the uses to which common ammonia can be properly put as a leavening agent, and which indicate that this familiar salt is hereafter to perform an active part in the preparation of our daily food.

The carbonate of ammonia is an exceedingly volatile substance. Place a small portion of it upon a knife and hold over a flame, and it will almost immediately be entirely developed into gas and pass off into the air. The gas thus formed is a simple composition of nitrogen and hydrogen. No residue is left from the ammonia. This gives it its superiority as a leavening power over soda and cream of tartar when used alone, and has induced its use as a supplement to these articles. A small quantity of ammonia in the dough is effective in producing bread that will be lighter, sweeter and more wholesome than that risen by any other leavening agent. When it is acted upon by the heat of baking, the leavening gas that raises the dough is liberated. In this act it uses itself up, as it were ; the ammonia is entirely diffused, leaving no trace or residuum whatever. The light, fluffy, flaky appearance, so desirable in biscuits, etc., and so sought after by professional cooks, is said to be imparted to them only by the use of this agent.

The bakers and baking powder manufacturers producing the finest goods have been quick to avail themselves of this useful discovery, and the handsomest and best bread and cake are now largely risen by the aid of ammonia, combined, of course, with other leavening material.

Ammonia is one of the best known products of the laboratory. If, as seems to be justly claimed for it, the application of its properties to the purposes of cooking results in giving us lighter and more wholesome bread, biscuit and cake, it will prove a boon to dyspeptic humanity, and will speedily force itself into general use in the new field to which science has assigned it.—*From the Scientific American.*

—THE REGULAR MONTHLY MEETINGS of the Medical Society of the County of Kings are held at 8 P.M. on the third Tuesday of each month at Everett Hall, 398 Fulton Street.

The July meeting will be held on the 18th. Account of cases of stretching Facial Nerve, by Dr. L. C. Gray.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

OFFICERS AND COMMITTEES FOR 1882.

<i>President</i>	C. JEWETT, M.D., 307 Gates Ave.
<i>Vice-President</i>	G. G. HOPKINS, M.D., 375 Grand Ave.
<i>Secretary</i>	R. M. WYCKOFF, M.D., 532 Clinton Ave.
<i>Assistant-Secretary</i>	W. G. RUSSELL, M.D., 165 So. 9th St., E. D.
<i>Treasurer</i>	J. R. VANDERVEER, M.D., 301 Carlton Ave.
<i>Librarian</i>	T. R. FRENCH, M.D., 469 Clinton Ave.

CENSORS.

B. A. Segur, M.D., 281 Henry St.	B. F. Westbrook, M.D., 174 Clinton St.
A. Hutchins, M.D., 796 De Kalb Ave.	A. R. Paine, M.D., 485 Clinton Ave.
J. D. Rushmore, M.D., 129 Montague St.	

DELEGATES TO THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

(1878 to 1882.)

Drs. J. C. Shaw, C. Jewett, T. R. French,	Drs. G. G. Hopkins, J. A. McCorkle, A. Sherwell, J. H. Hunt.	Drs. J. Byrne, B. F. Westbrook, G. W. Baker,
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Chap. XI., Art. 2, of By-laws: "Any Member elected as Delegate to the Medical Society of the State of New York, who shall be unable to act as Delegate during two successive years, shall be considered to have vacated his position as Delegate."

COMMITTEES OF THE SOCIETY.

HYGIENE.

Drs. B. F. Westbrook,	N. B. Sizer,	D. E. Chace.
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THERAPEUTICS AND CLINICAL MEDICINE.

Drs. J. A. McCorkle,	A. Hutchins,	E. H. Bartley,	A. R. Paine,	A. R. Matheson.
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OBSTETRICS.

Drs. J. R. Vanderveer,	A. S. Clarke,	E. Palmer,	W. Wallace,	B. A. Segur.
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SURGERY.

Drs. A. J. C. Skene,	J. S. Wight,	G. R. Fowler,	J. D. Rushmore,	P. L. Schenck.
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REGISTRATION.

Drs. J. A. Jenkins, A. S. Clarke,	Drs. W. G. Russell, Z. T. Emery,	Drs. F. W. Rockwell, A. Haslett.
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PHYSICIANS' MUTUAL AID ASSOCIATION.

Dr. W. W. Reese, N. W. Leighton,	B. A. Segur, A. L. Bartlett,	A. Hutchins, S. H. Olmstead,	J. A. Jenkins, A. W. Catlin.	R. M. Buell,
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PROCEEDINGS
OF THE
MEDICAL SOCIETY OF THE COUNTY OF KINGS.

VOL. VII.

AUGUST, 1882.

No. 6.

MEDICAL LEGISLATION.

BY D. E. CHACE, M.D.

The time has arrived when the status of the medical profession towards the public and towards fellow-practitioners of other schools forces itself into prominence and demands a decisive settlement. During the past decade queries have been put forth here and there; editors of medical journals have now and then broached a discussion, but the subject has been tabooed by a remarkable unanimity of consent to let alone, and, except an attempt to occasionally effect legislative enactments, absolutely nothing of importance has been accomplished. With the progress of these latter years, when so many barriers to intercourse have been swept away by greater facilities of communication and the larger intelligence of the masses, people are conversant with, and have a fair knowledge of, the problems occupying medical men's time and energies. The isolation, the reserve and oracle-like diction of the profession, have been replaced by a degree of candor and fairly honest expression of the merits and probabilities of the case under treatment, when conversing with educated laymen. To-day, however, the profession has no settled, well-defined policy, nor even agreement regarding matters of import to itself and to the public.

Unfortunately, the school of which we are disciples is held responsi-

ble, justly or unjustly, for the bitter antagonisms, contradictions by "experts" under oath, and mistakes in diagnosis in most important cases; and now, if ever, is the opportune moment to pause, consider well and seriously, and, if possible, agree upon such a course, and to be governed by such laws and methods as to preclude the possibility of these occurrences in the future. Most singularly, too, all these displays of doubt, ignorance (?) and unseemly controversy have taken place among men who are considered representative of the profession. There is nothing particularly new in all this, but it is as strictly true as is the fact that no well-sustained united effort has been made to remedy these evils, and that heretofore any one who had the temerity to make these statements, has been relegated to silence by unanimous consent. It is not presumed to define a method of adjustment of these difficulties; but if a discussion can be provoked which will look the whole subject squarely in the face, and in which shall be shown forth a fixed determination on our part to deal with these matters, as far as lies in our power, according to the merits, the object of this paper will have been amply attained.

Medical men to-day, in the State of New York, belonging to our school, practice under a statute which recognizes graduates of all schools, excepts none, gives preference to no one over others, and simply requires that a man who wishes to practice the healing art must file his name, together with a copy of his diploma or license, in the county clerk's office of the county in which he may reside, and he is thereby legally qualified. In this State the profession have reason to be congratulated on the good standing of their colleges, which put forth a laudable determination to graduate their pupils with a degree of care exercised in their training, and by exacting proofs of their fitness not always found elsewhere. Whatever is to be said condemnatory in this regard is to be applied chiefly to those bearing credentials from without our borders. However, one common law covers all, recognizes all, and conformity to which entitles one to legally practice the profession of medicine. Now, this law at present in force with us, is due to the exertions of members of our school of practice, and chiefly to our neighbors and brethren of the New York County Medical Society. It is not in evidence that it was enacted as it was originally drawn by them, for it is well known that the law of 1874, chapter 436, which was passed May 11th, was passed at a previous session, but the copy was interpolated somewhere, and the engrossed bill was so changed as to render the Act entirely unavailable for the intent for which it was created. This is offered to show the influences and expedients resorted to to defeat action upon such a measure. Prosecutions under the statute at present in force are rare, and doubtless the number is materially lessened by the burthen being placed

usually on a single individual—most frequently the Secretary of the County Society—who finds himself unable to cope with the sinister influences of the friends of the accused, and which are brought to bear directly upon the officials responsible for the conduct of the District Attorney's office. At any rate, the convictions are so infrequent as not to be worth mention. At present, however, the local position may be summarized as follows (and the same statement applies to each and every other locality in this State): The Kings County Medical Society exists as a chartered society by legislative enactment. It is a component part of the New York State Medical Society (which has a charter obtained under similar conditions), and it is entitled to certain representation in the State Society, and, lastly, it is presumed that the laws which govern the conduct and relations of the higher body, control and regulate the members and methods of the lower. But of this hereafter. Now the Homœopaths and Eclectics have incorporated societies which hold charters like ours, and which maintain precisely the same relations to one another. To our credit, if there be any, is to be assigned whatever legislation, and, in truth, all the enactments now upon the statute book relative to the subject. This, too, without consultation or deference to the wishes of the members of the other two schools. Now we are all agreed that it is but just and proper that the profession should be protected in its interests, and that some guarantee of efficiency should be given the laity of the qualifications of those upon whom they may have to rely for medical aid in an unlooked-for emergency. It would likewise appear that a union of appeal at Albany, after a conference of delegates of all schools, would result in more benefit than in this singleness of effort, and its unsupported presentation. Finally, any one familiar with the topic, does not need to be reminded that very few of the County Societies subscribe heartily to assist changes by legislation, and in those which do, there is an apathy, born of indifference, which is as astounding as it is deplorable. Furthermore, when we do not try to procure such measures as are needful and salutary, a laity disgusted with our dissensions and differences, is not likely to procure it for us. If, as hitherto, we presume to induce legislation which must be so general in character as to cover and govern the members of the Homœopathic and Eclectic schools, we cannot expect support—we might better prepare for resistance from them—as their opinions and intentions are totally ignored. Deeply seated prejudice has caused this non-recognition of our Homœopathic and Eclectic brethren. We have not failed to decry them, or, on the other hand, we have not permitted ourselves to acknowledge their existence. But that they do exist, and that they have a highly respectable and intelligent following, it were folly not to assert. It is not pleaded

here that we have aught in common save purpose, nor is there any thought of asking that we shall consult, and widely as we differ in theory and in practice, shall at the bedside strive to harmonize conflicting opinions, and put away for the while settled convictions, to us well defined and established dogmas. For all this were worse than useless; it can but terminate disastrously to the patient, or in a most inopportune and bitter controversy in the sick chamber. But we cannot longer ignore these gentlemen's claim to the same right to practice which we possess; nor can we justly and in fairness declare they have no interest in legislation which affects us all equally alike; nor dispute their claim to the endeavor to reach a high and still higher proficiency in their medical colleges. Now, if this be the case (and it is undoubtedly the truth in this State), why not acknowledge their equal interest in the laws governing our corporate bodies, in the laws pertaining to sanitary conditions and establishments, and, finally, in the creation of a tribunal or the maintenance of such a code as shall free us from reproach in criminal actions, suits for malpractice, and in actions for damages? These gentlemen might say that all of the disagreeable situations mentioned above reside with us; that all the odium and obloquy brought upon medicine and surgery, as viewed in public, was rightly charged to us, and that when we had set the example of union of sentiment and harmony of action, they might then deign to listen to us, and seek advice and counsel where they could reasonably hope to find it. But whatever of acrimony there may have been in the discussion of these affairs, the bitterness and intemperance of language is to be credited to our side of the house.

A paper* read before this Society in June, 1881, presented some suggestive thoughts of interest worthy of consideration; but as yet no well-prepared debate upon these has taken place. It seems to us that the main points for legislative action, if any, are the following:

First. The enactment of a new law, or the fulfillment of the present one, whereby the people and the profession can be protected against the encroachments of so-called doctors. That this is particularly needful in large cities, is not to be denied. The cancer-doctor, the herb-doctor, the seventh son, the spiritual healer, and the so-called specialist, who is nothing else than an abortionist, the community can afford to retire to private life, as also the celebrated Mr. or Mrs.——, who, in a trance state with the spirit of an Indian princess, cures all the maladies of this life. All these and their kindred we want to get rid of. We can all make a common fight upon this ground. Regarding suits for damages, something must be done, and that speedily, if the little respect remain-

* Points of Interest in Medico-Legal Trials—JEROME WALKER, M.D.

ing for medical testimony is not to be totally replaced by contempt of all and any opinions vouched for on the witness-stand by physicians.

The thought occurs that it is but natural for men to "take sides" with the parties by whom they are employed, and, granting honesty of purpose, they easily incline as far (and very often too far) as possible to a statement in consonance with their principal's interests and advantage. A commission appointed by the court or maintained by law, so as to be independent of all considerations, emoluments, or suspicion of direct interest in the action brought before it, would, perchance, solve the difficulty.

Under the new code testimony is given in such a manner that its very putting together would confuse any jurymen who strived to understand. Why not put it in the shape of an affidavit, declaring whatever of fact there might be, and assigning reasons and authorities for expression of deponent's belief as to prognosis. Would this not be preferable to the permitting of an attorney to study up on the question, coached by a doctor, and demonstrate in the court-room his ability to cram a little anatomy and less therapeutics, and with great unction, self-possession and feigned consciousness of being thoroughly acquainted with medical literature pertaining to this, if not all subjects, propose for the witness a suppositious case, presumed to be analogous to the one on trial, but which, in the majority of instances, is but the rehearsal of a string of medical phrases and impossible conditions and states, which, in one brilliant effort at our bar in this city, located the spinal ganglia in the tendo-achilles!

Personal animosity and the temptation to win the case by unfavorable or favorable prognoses, tend to decrease the eliciting of a clear and comprehensive declaration as to the merits of the injury under investigation. Again—

The incarceration of alleged lunatics upon the sworn statements of physicians appointed by the county judge; and the detention of these unfortunate beings for years without cause and without redress, has, by a recent exposure of a case in point in New York City, excited a rigorous protest from the community against men and laws which render possible such disgraceful proceedings.

Coroners' inquests, and the criminal trials following the verdict therein given, are so frequently improperly conducted, the post-mortem examination so carelessly made as to be repeated and repeated, until the skeleton is alone left to show a semblance of mortality, need thorough investigation, whereby these may be improved in conduct and efficiency.

Following in natural order (as a component part of the above), chemical analyses are made of tissue and fluids of the dead body, and

then to the full glory of a lecturer on chemistry is added the ever ready attorney for the defense, who proposes to prove that it could all be otherwise than stated, or proceeds quite coolly to impeach the entire testimony by that of another witness, the latter testifying directly contradictory of the former.

It was believed, until it was tried, that a law could be passed making it compulsory upon persons suing physicians for malpractice to give bonds for payment of costs in the event of their not establishing their claim to mulct the doctor—but the bill died an easy death in an assembly committee room. Without entering into detail, we have in what has been said an outline of things proper, nay, most essential. Are we ever to enjoy the benefits most surely to accrue from the promulgation of such laws?

Not many years since a gentleman, high in professional rank and influence, wrote most earnestly against the idea of doctors seeking alterations of existing laws, and now the movement to better the shameful condition of things is not, in our judgment, to be inaugurated at the State capitol. In the first place, those expressing themselves upon the subject have declared by a large majority the necessity of all that ought to be, but no definite plan has been mooted, certainly not concurred in. Nor is it deemed expedient that we should do aught else *now*, than persistently agitate the whole matter, until interest shall be taken in other sections of the State.

By the continued rehearsal of our wants a general enthusiasm may be stimulated, and then and not until then can we approach our political Solons.

We must first set our house in order, heal up our own differences and antipathies, come to a perfect and complete understanding as to our wants, then with the aid of our fellow practitioners of different creeds, we can organize for a victorious contest. Nothing is to be done hastily, and if the movement be inaugurated now, months, perchance a year or so, must elapse ere practical, feasible plans shall have been determined on and formulated into proper decrees.

NOTES OF LABOR IN DEFORMED PELVIS.

BY CHAS. JEWETT, M.D.

CASE I.—FUNNEL-SHAPED PELVIS.

M. S., æt. 35 years, of Irish birth, primipara, at term, fell in labor July 3d, '82. Dr. Jos. Healy being summoned July 6, finding the pelvic outlet too narrow to admit of delivery by ordinary means, requested the assistance of Dr. I. H. Platt and myself. When I reached the patient, about 12 P. M., I found the head on the pelvic floor, in occipito-anterior position. Here it was arrested by the inward projection of the ischia. The transverse diameter at the outlet was about three inches. The sub-pubic angle did not exceed 60° . The woman's pulse at this time was 130 and very feeble; the vagina hot and dry; the abdomen extremely tympanitic, and exquisitely tender on pressure. History of no foetal movement for several hours; foetal heart sounds not obtainable. Craniotomy was at once decided upon, and the operation was done by Dr. Healy. The cephalotribe was not available for crushing the head as the space was too narrow to admit of locking the instrument without undue violence.

The child was a female of apparently not less than ten pounds. The head was large, and the bones of the cranial vault exceptionally hard and unyielding.

After the extraction of the foetus, the uterus contracted firmly upon the placenta. Owing to the excessive tympanites, expression by the method of Credé was impracticable. The placenta was therefore removed by the hand in the vagina. So narrow was the outlet of the pelvis that the uterus could be reached only with the utmost difficulty. The placenta was found wholly separated but firmly grasped in a globular cavity formed by the contraction upon it of the upper segment of the uterus. The opening into this globular cavity was barely sufficient to admit the finger. The portion of the uterus below the point of constriction was trumpet-shaped, expanding gradually from above downward.

In brief, the case was a typical one of so-called hour-glass contraction. By carrying the hand up into the cervix and slowly dilating the constriction with the fingers, the placenta was finally delivered.

The above case affords a good illustration of the real character of this accident now so well understood through the teachings of Bandl.

Hour-glass contraction was formerly attributed to paresis of a portion of the uterine muscular wall; in other words, to irregular contraction. Now we recognize in it the simple result of normal uterine contractions taking place upon a wholly imprisoned placenta.

During labor, normally the greater mass of the uterine muscular fibers gradually gather into the upper segment of the uterus, whose walls thus become very thick. The lower uterine segment is left extremely thin. The muscular ridge at the point of division between the two segments is the ring of Bandl. This point is at a greater or less distance above the true internal os-uteri. All that portion of the uterus below Bandl's ring, sometimes termed the obstetrical cervix, is generally in a flaccid condition for several hours after delivery, taking no part in the contractions of the third stage. If violent contractions now occur while the placenta is wholly in the upper segment of the uterus, the ring of Bandl is liable to be closed and the placenta imprisoned in the cavity above. The muscular action of the uterus which tends to expel the placenta when Bandl's ring is prevented from closing by a portion of the placenta lying therein, tends to imprison the placenta when it lies wholly above that point.

Obviously, the premature administration of ergot is liable to give rise to the above accident. Accordingly, in cases of hour-glass contraction, it is not infrequently found that ergot had been used during the second stage.

Despite the active use of restorative measures, the patient sank and died about sixteen hours after delivery.

AUTOPSY

by Dr. A. H. P. Leuf, who kindly furnished notes from which the following extracts are taken:

Body of stout build and well-rounded development; height, $57\frac{1}{4}$ inches; no spinal or other deformity apparent to the eye; spleen much softened; both kidneys fatty. Peritoneal vessels injected here and there over the uterus and a portion of the abdominal wall.

The chief object of pathological interest was the pelvis, which strongly approximated the male type. It was removed, and after the soft structures had been cleared away I obtained the following

PELVIC MEASUREMENTS:

Ilio-cristal	$10\frac{1}{4}$	inches.
Ilio-spinal	$9\frac{3}{8}$	"
Conjugate, at brim	$3\frac{7}{8}$	"
Transverse, " "	$4\ 9-16$	"
Obliques, " " each	$4\frac{3}{8}$	"
Transverse, at outlet	$3\ 1-16$	"
Antero-posterior, at outlet	$3\frac{7}{8}$	"
Sub-pubic angle	58°	

CASE II.—FLATTENED PELVIS.

In contrast with the above case is another which I saw in May last by the kindness of Dr. J. Corbin. The patient was a healthy German woman of 25 years, ii.—para, of full muscular development, having no spinal or tibial curvatures, but of exceedingly small stature—4 ft. 6½ inches in height. No history of rachitis. Diagnosis of flattened pelvis.

In her first confinement, she states, she was five days in labor under the care of a midwife and an irregular practitioner in New York. The child died immediately after birth.

In the second labor, the duration of the second stage was eight and a half hours. During this time the uterine efforts, which were of the most vigorous character, were expended in moulding the head and overcoming the obstruction at the brim. The brim once passed, delivery was accomplished in a single pain. Neither child nor mother experienced an untoward symptom during the lying-in period.

I obtained the following pelvic measurements after delivery:

External conjugate.....	6¾	inches.
Ilio-spinal.....	8¾	"
Ilio-cristal.....	10 5-16	"
Internal conjugate.....	3½	"
Other diameters.....	ample.	

The child's head presented the average measurements.

A well-defined groove over the left temporal region marked the track of the sacral promontory.

The wisdom of the doctor's course in withholding the forceps in this case was amply vindicated.

It is worthy of note that in this class of cases—slightly flattened pelvis—Nature boasts the best statistics—version stands next, while the mortality of forceps operations above the brim is something formidable.

THOUGHTS ON THE ETIOLOGY OF UTERINE DISEASE, WITH CASES.

BY N. B. SIZER, M.D.

Accurate clinical observation is *confessedly* difficult; but to correctly generalize from facts, to deduce rational theory and efficient therapeutics therefrom, "*Hic labor, hoc opus est.*"

The mind of the observer is modified by the physical circumstances which surround him; his state of health, his inclinations, his prejudices, *all* reflect themselves in thought and argument, and modify or mar the result.

To *this* cause we may refer that opprobrium of our profession, the conflicting theories which so sadly annoy the practitioner and which inspire distrust and skepticism in the lay observer.

Gynecology (though in some respects a model of accuracy and precision) has, like its neighbor fields of research, suffered from the same multiplicity of theory and practice.

Let us, to understand the ground we must traverse, briefly glance at the prevailing theories.

I. The "INFLAMMATORY THEORY," extensively held by the most prominent gynecologists; that local inflammatory action is the starting point of *most* uterine disease, which stands in the relation of effect to cause with the local engorgement.

II. The "CONSTITUTIONAL THEORY," held mostly by the older school of practitioners, and by many who pay small attention to gynecology; that most uterine disease depend upon some *constitutional* fault, and may be remedied without local interference of *any* kind, or, at least, that this is of slight or no value.

III. The "DISPLACEMENT THEORY," that most uterine disease is secondary to uterine malposition, and will disappear upon the use of suitable support.

IV. The "OVARIAN THEORY," that most uterine disease is *secondary* to and *sympathetic* with ovarian engorgement and hyperæsthesia.

V. and VI. Two modifications of the inflammatory theory; that of *Tyler Smith*, that cervical catarrh is the starting point of cervical engorgement and degeneration; and that of *Dr. J. H. Bennett*, that where parenchymatous inflammation exists, cervical metritis is the RULE and corporeal metritis the EXCEPTION.

Without desiring to discuss fully these various theories, it may be briefly stated that the "inflammatory theory" is the oldest, and appears to be the most acceptable to modern gynecologists.

The "constitutional theory" is still held by many excellent men, who, perhaps, too lightly regard the *local* lesion.

Its great defect appears to be its encouragement of inefficient practice, like that of a physician in this city—not a member of this Society, I am happy to state—whose uniform remedies in all cases are "Ext. Symplocarpi Fœtid. Fl.," to "quiet the nerves," and a corresponding preparation of "Cotton Root" for the local engorgement; no local applications or special diagnosis being necessary!

The "displacement theory" is essentially French in development, and is the favorite of Velpeau, Valleix, and other able men. Its legitimate result would seem to be the innumerable multitude of pessaries, few of which appear to give much satisfaction to any but the inventors and instrument makers.

The ovarian theory may be dismissed with the remark that *careful* diagnosis will discriminate between *uterine symptoms*, sympathetic of *ovarian lesion* and the *contrary*, and that practitioners who have failed to establish a diagnosis are sometimes *too* apt to fall back on *this* theory; hence, it should be avoided, if possible. Tyler Smith's view may be regarded as *extreme*, for while chronic endocervicitis may be followed by serious results, yet it is not *generally* such a starting point.

Dr. Bennett's theory appears to state the *general* fact. These various theories of pathology, while spurring on investigators, have at the same time succeeded in "mixing up" the Etiology and Therapeutics to such an extent that with many physicians their practice oscillates between the contradictory extremes of timidity and rashness, or differs among themselves to an irreconcilable extent. *E. g.*, a certain physician had a case of chronic corporeal endometritis. Being a disciple of Tyler Smith, he recognized only the *uterine catarrh*, which he treated. By another practitioner *displacement* only was recognized and treated. By a third, still more inefficient, all the symptoms were referred to *ovarian irritation*. It is not our purpose, however, to preach a homily on the shortcomings of theories, but to examine some points in the etiology of uterine disease, where the confusion of theories might occasion doubt.

Local treatment (as far as the *examination* and *application* of remedies is concerned) is more or less *completely* under the control of the practitioner, but the *regimen* of the patient, her habits of dress, exercise and social relations, are far less easily supervised.

In etiology, the classification of Dr. Thomas may be best followed. He confines his enumeration to causes more prominent and universal, *not* those more exceptional and rare.

It may be given as follows:

"Want of fresh air and exercise.

"Excessive development of the nervous system.

"Improprieties in dress.

"Imprudence during menstruation.

"Imprudence after parturition.

"Influence of abortion, or attempts to produce it."

It may be assumed, with small fear of contradiction, that there is *no* reason why the *human* female should be in any *great* degree the inferior of the male while her health is properly cared for, and the customs of civilized life are not allowed to produce any depreciation of her endurance or vital power of resistance to disease. In none of the lower animals does this marked inequality of sexes obtain, nor is it found to any great degree in the "*stout peasantry*" of northern Europe, or in the semi-civilized or barbarous races.

Let us look, then, at the list of causes as Thomas enumerates them:

“Want of fresh air and exercise.”

Any one who has ever had the opportunity of comparing the exercising habits of American women with those of their European sisters must have been struck by the remarkable difference. Where *our* women walk *one* mile *they* walk *ten*.

The English girl is taught that to preserve her health and beauty she must exercise daily in the open air, and she does so systematically, rain or shine.

On the contrary, American girls are taught that it is “unladylike” to engage in any open air pastimes which require the use of muscular strength, no *systematic* exercise being practiced in the *vast majority* of cases.

Even horse-back riding, so common abroad, is here only noted as exceptional.

The English girls, moreover, are not ashamed to dress in plain, durable clothing, and hence the weather is very inclement indeed, which keeps them at home.

The second cause mentioned by Thomas (excessive development of the nervous system) may be directly derived from, and is indeed the natural result of, the first.

If the *physical* frame is untrained and undeveloped, while the *mental* powers are pushed forward to their greatest extent, we *must* necessarily have, as a result, that precocity of development of the nervous system which we perceive every day among our women, accompanied by a morbid susceptibility to impressions, feeble muscles, and a marked tendency to diseases of the generative apparatus.

If then, a woman, having prepared her system for the almost unimpeded advance of disease by the causes already mentioned, superadds to them a style of dress which, when adjusted upon her person, forces a naturally mobile uterus upon the pelvic floor and exposes it to friction under pressure, for *over half of the twenty-four hours*, extra pressure by a distended stomach being made at intervals, while, in addition, she clothes her lower limbs in garments markedly insufficient for *ordinary* protection in any but summer weather; and this even when the pelvic viscera are intensely congested by the menstrual issues, it is not strange that our houses are filled with invalids, and gynecologists thrive in the land.

The same criminal carelessness is to be found after parturition and during involution—the same forces are brought to bear upon an enlarged and heavy uterus; with a mucous membrane especially liable to disease.

With this view of the care women exercise toward their own health,

let us especially consider the relation of the marriage state to the etiology of uterine disease, as it is not uncommon to find young girls who have complained of vagino-uterine symptoms, advised by medical men, thoughtlessly perhaps, to marry in hope of regaining health! It is my earnest and strong conviction that, with few if any exceptions, *uterine disease absolutely contra-indicates matrimony*.

A pure endo-metritis of the cervix or body; ovarian inertia with amenorrhœa; super-involution in a young widow, etc., *might* be relieved by the conjugal relation and its sequel, parturition.

But to a woman who has, as most women have, systematically displaced her uterus by years of imprudence, marriage, in itself physiological, becomes the fruitful source of pathological results.

How familiar to all gynecologists are these cases of metritis, which occur after matrimony, and not alone where excesses have been committed, but where, by the previous existence of displacement, *any* indulgence on the part of a woman becomes fraught with danger.

Displacements without inflammation have been mentioned as indicating matrimony, but it would be difficult to imagine a *serious* displacement as long existing without inflammation, in most women after marriage.

Cervical constriction with dysmenorrhœa has also been suggested as suitable for treatment by matrimony, with the idea that a radical cure might be effected by dilatation of the cervix at full term by a healthy foetus, but the fact that the lesion named is a well-known cause of sterility, would be a good answer to objectors, as well as the fact that the disease is much easier relieved by the rapid dilatation of the cervix after the method of Dr. Ellinger, of Stuttgart, or by other operative procedure. The same causes which have been mentioned as producing ill effects as the result of the first sexual approaches after matrimony also operate with increased vigor in cases of uterine diseases occurring in married women.

The frequent complaint of women that they have never "been well since marriage," although healthy girls before, will readily recur to us, and perhaps the pathological chain may be expressed as follows, still following Thomas' classification:

- 1st. Original tendency to disease of generative apparatus induced by
 - (A.) Want of air and exercise.
 - (B.) Excessive development of nervous system to the detriment of physical strength, and improprieties of dress producing uterine dislocation.
- 2d. Imprudence during menstruation leading to
- 3d. Endo-metritis of cervix or body or both.

4th. Marriage, causing excessive engorgement of the uterus and appendages as the result of the first conjugal approaches.

5th. Continual tendency to inflammatory action kept up by the sexual relation, and aggravated by

6th. Abortion or parturition, and imprudencies after either.

Here appears to be causation enough for the whole series of diseases which gynecologists describe so minutely.

So much for pathology and etiology. As to prevention; it may be stated that although the obstacles are enormous, something may yet be done.

The most doubtful fact would seem to be the question whether women could, to any practical degree, be led to adopt more physiological styles of dress.

The efforts hitherto made would seem to negative such a question, by their own ill-success; still the question of dress seems to be the keynote.

A second point would be to discourage matrimony in girls with uterine disease.

It is evident that if no means are avoidable for diminishing the tendency to disease in virgins, they will still dislocate their uteri, and, of course, marry as usual, however desirable a celibate life might be in a medical point of view.

It is possible, however, for parents to be told how highly undesirable it is that a daughter should marry while complaining of symptoms referable to the uterus; in other words, that she should be put in "good order," to mitigate as much as possible the ills which are so apt to follow.

It is doubtful whether the counsel of special forbearance in the early stages of marriage would be of any avail, for it is wonderful to what excess persons otherwise moderate and careful will attain; still, the warning should be given.

The most practical points appear to be:

1st. Judicious management after marriage.

2. Avoidance of too frequent parturition or abortion.

3d. Control of the sexual relations during menstruation, and the existence of uterine disease.

These points experience teaches us are difficult to achieve, but much can be done by perseverance and firmness; and herein will be found to lie much of the secret of success in treatment of disease.

No adherence to any special theory should blind the physician. He should remember that he may have, at the *same time*, constitutional predisposition to disease; displacement of the organ, with inflammatory

engorgement from local injury; and ovarian neuralgia, or cervical leucorrhœa as a complication.

If he treats one or two and ignores the others he most probably will fail. If he can ascertain which is cause and which effect, he may treat with accuracy and success, to the relief of his patient and his own pecuniary professional benefit.

Among my notes are a few cases illustrating some of the points mentioned, which I briefly record.

CASE 1.—Epileptiform convulsions from cervical stricture; bilateral cervical hysterotomy; health for 15 months; relapse after marriage.

L. L., æt. 17, was first seen November 15th, 1872, and gave the following history: Relatives generally healthy; generally well herself, though not very strong; began to menstruate at 14 years and 2 months, and was very regular after her 15th year, with no special pain or annoyance at the time of the menses.

In July, 1872, caught cold during menstruation; had entire suppression after two days, with pain in the back and on walking, and felt as if she were falling to pieces.

Was examined by a physician within a week, who said she had ulceration of the inside of the womb, and treated it by solid nitrate of silver, he told her, several applications being made. No special annoyance until the next menstruation, when she had great pain; the blood being expelled in clots, and a slight spasm of her limbs, lasting a few moments, was noticed.

Her September menses were very painful, and several spasms, with insensibility; biting of the tongue, and a tendency to one-sidedness occurred.

About October 1st she was frightened, and had a severe convulsion which lasted ten minutes. In October she menstruated with no more difficulty than usual, but had five or six spasms, and from this time to November 15th, which was just before her menses, had had two or three spasms.

On examination, her vagina is somewhat hyperæsthetic, but not more so than is usual in virgins; cervix is rather lower in the pelvis than normal; uterus movable and not sensitive; the os is very small, and feels like a dimple. Simpson's sound will not pass, but a fine silver probe passes two and a quarter inches. Slight spasmodic movement was noticed as the cervix was touched in the digital examination, and a marked convulsion occurred as the probe passed the os internum, which lasted ten minutes.

One-fifth of a grain morphia acetate hyp. Patient put to bed, with no further trouble.

On November 17th began to menstruate, and had first spasm two hours after show appeared. Uterine colic very marked, and blood passes into vagina by clots. The convulsions are markedly epileptic; with the cry, the biting of the tongue, insensible conjunctivæ, and the face turned over the right shoulder at the beginning of attack.

R. Potassium Bromide, gr. xx, b.i.d. November 27th, menstruation lasted four days, on two of which convulsions occurred. Uterus is now quiet; examination does not annoy or procure return of eclampsia.

Dilatation was commenced and carried up to 20 f. before next menstruation; no unfavorable symptoms occurred.

December 12th, began to menstruate; not much pain; only one spasm; five days sick. Bromide (which had been given, gr. xx, b.i.d., for five days, and gr. x, t.i.d., up to December 1st, and then stopped) was renewed, and given at the latter rate for five days, and then twice a day all the time. No further local treatment at present advised.

January 5th, 1873, menstruated.

January 6th. Since yesterday, 3 P. M., to 10 A. M., three convulsions, and patient as bad as ever. Clots as before.

January 10th. No longer menstruating. 5 f. passes with difficulty, and gives signs of bringing on eclampsia.

January 18th. Feels very well, taking bromide as before; stomach uncertain; stop bromide for one week, and renew every other week.

January 19th. Anæsthetized by ether, f. 3iss used. Cervix after being rapidly dilated to 20 f. by sounds, and bilaterally incised to os internum with Sims' knife, after which 30 f. passed readily to fundus, two inches of gum-elastic catheter left in the cervix, and held in place by a tampon of cotton and glycerine. Full dose of morphine given and put to bed.

January 20th. Very comfortable; no special pain; tampon removed; no great hemorrhage has occurred; 30 f. passes easily; plug of cotton left in the cervix; tampon re-applied.

January 21st to 25th. Treatment repeated daily as on the 20th; no constitutional irritation has developed, although slight traumatic fever occurred for forty-eight hours after the operation.

January 26th. Allowed to sit up in bed.

January 28th. Tampon permanently removed; 30 f. passed as before.

February 2d. Menstruation began; no pain, compared with formerly; one slight convulsion; no clots, and lasts five days; 30 f. passed every other day.

March 2d. Menstruation lasted four and a half days; no pain, no trouble.

March 30th. Menstruation lasted five and a half days; no pain, no trouble. For the last month 30 f. has been passed twice a week, with no signs of relapse.

April 15th. Up to this, since recovery from the operation, she has taken potassium bromide, gr. v, t.i.d., for every other week.

Now says she feels very well, and is sent off to the country by her friends. Ordered to resume the potassium bromide for a week at every menstruation, and to avoid everything tending to congest the uterus.

May 7th, 1873. Reports herself well, and gaining flesh and strength; no sign of dysmenorrhœa or eclampsia seen.

August 1st, 1873, with the same report. Advised not to marry for at least eighteen months, and says she has no idea of it.

May 15th, 1874. Reports herself well. Says she was married on the 5th of May, but feels well.

June 5th. Looks very badly; says she began to menstruate May 23d. Had four very severe convulsions, with much uterine colic, since then has had much leucorrhœa, with backache.

Ordered potassium bromide, gr. x, t.i.d., and local treatment advised.

Soon after this patient moved out of town, and has been lost sight of.

This appears to be a case where marriage has excited so severe endo-cervicitis, which, by congestion, has so narrowed the cervix as to bring on again the disease from which she was relieved by operation.

While we cannot be certain that she would have remained entirely well had she deferred matrimony for the time specified, yet we may be confident that the danger of relapse would have been much less.

CASE 2.—Obstinate dysmenorrhœa of ten years' standing; marriage prescribed as a remedy, with an increase of the difficulty; sterility; treatment by dilatation; cured.

A. B., aged 27; first seen April 5th, 1874. Married six years; never pregnant. Intense dysmenorrhœa since seventeen years of age, for which she was advised to marry,

and did so at twenty-one; but the trouble was increased rather than diminished. She now complains of severe backache, with profuse leucorrhœa, with the symptoms much aggravated during menstruation, and increased by the addition of very distressing uterine colic. Examination shows a highly congested and very tender cervix rather conical in shape; os very small, surrounded by a slight patch of ulceration, which extends up into the cervix, and appears to be of long standing.

Sims' probe passes with difficulty and pain to the fundus, two and three-quarters inches. No displacement made out.

R. Depletion by puncture; f. 3ij. blood drawn; plug of cotton and glycerine in the cervix.

Vaginal douche, at 100° F., twice a day.

April 10th. Much better; has little pain; cervix will now admit, with perseverance, 10 f.; constriction appears to be most marked at internal os; local treatment, as before.

April 13th. Patient feels very well. Ellinger's dilator used without anæsthesia, and cervix rapidly dilated up to 30 f., with no particular pain or hemorrhage; vaginal tampon applied; put to bed for thirty-six hours. Up to May 1st, had been seen every other day; no unfavorable symptoms had arisen.

Cervix is now normal, and the endo-cervicitis is almost gone; has no backache and no leucorrhœa; 30 f. passes, with a little management, easily. Is now expecting every day to menstruate, and is requested to report how she passes it.

July 1st. Patient lost sight of till to-day; says she has missed two menstrual periods; uterus is found to be enlarged; health is good; she is probably pregnant.

REMARKS.—This case illustrates the principle that when *marriage alone* is advised to relieve abnormal conditions, it may not only fail to relieve, but may even aggravate the symptoms.

The results of the operation will be perfected at delivery; but the future health of the patient will be dependent upon her own care, principally.

Several other interesting cases have been lately seen, which illustrate points already mentioned, but they must be omitted, as too greatly enlarging a paper perhaps already too extended.

MINUTES OF THE MEDICAL SOCIETY OF THE COUNTY OF KINGS.

A stated meeting of the Society was held on the evening of Tuesday, July 18th, 1882, at No. 398 Fulton St., Brooklyn. The President, Dr. Jewett, in the chair, and about thirty-five members present. The minutes of the previous meeting were read and approved.

The following proposals for membership were made: By Dr. D. E. Chace, F. H. Ross, M.D., 122 Sands St.; by the President, Drs. W. A. Northridge, 139 Monroe St., J. E. Morgan, 155 De Kalb Av., Agnes Sparks, 232 Quincy St.

THE COUNCIL reported acceptance to membership as follows: J. L. Kortright, M.D., Col. P. and S., N. Y., 1881; W. J. Doyle, M.D., Jeff. Med. Col., 1881; Robert Scrimgeour, M.D., L. I. C. H., 1881; F. L. R. Tetamore, M. D., L. I. C. H., 1882; H. C. Murphy, M.D., L. I. C. H., 1882; G. R. Barnes, M.D., L. I. C. H., 1882; R.

L. Dickinson, M.D., L. I. C. H., 1882; J. J. Keane, M.D., L. I. C. H., 1882; J. N. Platt, M.D., L. I. C. H., 1882; John Rankin, M.D., L. I. C. H., 1882.

Dr. D. E. CHACE read a paper entitled "Medical Legislation." It was discussed by Drs. Squibb and Chace.

In executive session, the chair announced the death of Dr. Geo. Fletcher, and on motion of Dr. Wyckoff, appointed Dr. J. C. Schapps, C. F. Young and E. A. Wheeler a committee to prepare an appropriate obituary notice.

THE PRESIDENT declared the following to have been duly elected members of this Society, namely: Dr. Almon S. Allen and Agustin M. Fernandez.

On motion, the Society adjourned.

Ἀσκληπιὸς



ὁ Σωτήρ

Χάρμα μέγ' ἀνθρωποῖσι, κακῶν θελυτῆρ' οδυναῶν.

Hymns of Homer, No. XVI.

PROLIFERATIONS.

—DR. HARRISON J. JOHNSTONE died in Brooklyn, July 10, at the age of forty years. He was a native of Ireland, a graduate in medicine at Dublin and Edinburgh, and had been settled twelve years in this city as a practitioner of medicine.

—DR. FRANCIS V. BRUSH, formerly well known in Brooklyn, died at Norwalk, Conn., on July 8, in the 38th year of his age. He was a native of this city, and a graduate from the College of Physicians and Surgeons, New York. The fatal event was caused by Bright's disease of a chronic character.

—OBJECTIONABLE ANÆSTHESIA.—Western women are sharp; but the Plattsmouth (Neb.) female is entitled to the premium for smartness. The other day she went into a shoe store to buy a pair of shoes. The clerk was in the act of sprinkling some chalk-powder inside, so they might slip on easily. She glanced furtively at him and remarked: "I know what you're doing." The genial clerk smiled acquiescence. She slid toward the door, and said, in tones that startled his nerves: "You can't chloroform me, mister; I was fooled once before, and I'm blamed if I'll be again." And she left without the shoes.

—BELLEVUE HOSPITAL MEDICAL COLLEGE.—Dr. F. A. Castle, the historian of the Bellevue Alumni, has recently issued a circular letter calling for information concerning certain of the deceased alumni of that school. In the list he furnishes, we note the following names of physicians who formerly practiced medicine in this county: Orestes M. Pray, M. B. McPhillips and Thomas A. Brady. Any one possessing the desired information will please address Dr. Castle.

—GARMENTS FOR WARM WEATHER.—There has recently been imported from Germany a new variety of underwear, known as Moeller's netting garments. These are made from meshed cotton or silken cord thread in several sizes and qualities, and are probably the coolest device that can be found for summer wear. By their use the air has freer access to the skin, the garments cannot adhere so closely thereto as is the case with almost all other forms of clothing, and the knots making up the meshes are not so coarse as to be irritable except to very sensitive individuals. It is said that this underwear has been adopted by some of the European armies. A descriptive circular may be obtained by applying to the agent for these goods at No. 7 Clinton Place, New York.

—NITRITE OF AMYL has been used hypodermically by Dr. J. J. F. Barne, as described by him in the *British Medical Journal*. In thirty or more cases a ten per cent. solution in rectified spirit was used. No unpleasant results were observed. The action of the drug was immediate, and the phenomena were similar to those obtained by the ordinary method of administration. Ten minims of the solution, equivalent to one minim of the amyl, was the dose usually given by Dr. Barnes. He states that the solution in spirit, kept in an ordinary stoppered bottle, does not readily lose its efficiency.

—A SUIT AGAINST THE "LANCET," by the Corporation of Brighton (England), has been entered on the charge of a slander against the town and a libel of her authorities, for the reason that that journal has spoken words derogatory to the sewerage and drainage, and other matters of the sanitary administration of the town. The veteran *Lancet* welcomes the suit, as a means of testing the question whether facts touching the sanitary state of a community can or cannot be lawfully written by the press, and especially by the medical press. The progress of this suit will be watched with universal interest.

—THE PHARMACEUTICAL SOCIETY has chosen the representatives allotted by law to them in the Board of Pharmacy of Kings County. At a meeting held July 24, Grenville M. Baker, M.D., and George A. Newman were elected to be their own successors in that Board.

—THE REGULAR MONTHLY MEETINGS of the Medical Society of the County of Kings are held at 8 P.M. on the third Tuesday of each month, at Everett Hall, 398 Fulton Street.

The August meeting will be held on the 15th. Account of cases of stretching Facial Nerve, by Dr. L. C. Gray.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

OFFICERS AND COMMITTEES FOR 1882.

<i>President</i>	C. JEWETT, M.D., 307 Gates Ave.
<i>Vice-President</i>	G. G. HOPKINS, M.D., 375 Grand Ave.
<i>Secretary</i>	R. M. WYCKOFF, M.D., 532 Clinton Ave.
<i>Assistant-Secretary</i>	W. G. RUSSELL, M.D., 165 So. 9th St., E. D.
<i>Treasurer</i>	J. R. VANDERVEER, M.D., 301 Carlton Ave.
<i>Librarian</i>	T. R. FRENCH, M.D., 469 Clinton Ave.

CENSORS.

B. A. Segur, M.D., 281 Henry St.	B. F. Westbrook, M.D., 174 Clinton St.
A. Hutchins, M.D., 796 De Kalb Ave.	A. R. Paine, M.D., 485 Clinton Ave.
J. D. Rushmore, M.D., 129 Montague St.	

DELEGATES TO THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

(1878 to 1882.)

Drs. J. C. Shaw,	Drs. G. G. Hopkins,	Drs. J. Byrne,
C. Jewett,	J. A. McCorkle,	B. F. Westbrook,
T. R. French,	A. Sherwell,	G. W. Baker,
	J. H. Hunt.	

Chap. XI, Art. 2, of By-laws: "Any Member elected as Delegate to the Medical Society of the State of New York, who shall be unable to act as Delegate during two successive years, shall be considered to have vacated his position as Delegate."

COMMITTEES OF THE SOCIETY.

HYGIENE.

Drs. B. F. Westbrook,	N. B. Sizer,	D. E. Chace.
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THERAPEUTICS AND CLINICAL MEDICINE.

Drs. J. A. McCorkle,	A. Hutchins,	E. H. Bartley,	A. R. Paine,	A. R. Matheson.
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OBSTETRICS.

Drs. J. R. Vanderveer,	A. S. Clarke,	E. Palmer,	W. Wallace,	B. A. Segur.
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SURGERY.

Drs. A. J. C. Skene,	J. S. Wight,	G. R. Fowler,	J. D. Rushmore,	P. L. Schenck.
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REGISTRATION.

Drs. J. A. Jenkins,	Drs. W. G. Russell,	Drs. F. W. Rockwell,
A. S. Clarke,	Z. T. Emery,	A. Haslett.

PHYSICIANS' MUTUAL AID ASSOCIATION.

Drs. W. W. Reese,	B. A. Segur,	A. Hutchins,	J. A. Jenkins,	R. M. Buell,
N. W. Leighton,	A. L. Bartlett,	S. H. Olmstead,	A. W. Catlin.	

PROCEEDINGS
OF THE
MEDICAL SOCIETY OF THE COUNTY OF KINGS.

VOL. VII.

SEPTEMBER, 1882.

No. 7.

TWO CASES OF STRETCHING OF THE FACIAL
NERVE.

BY L. C. GRAY, M.D.

My first patient was a Swede, æt. 36, an engineer by trade, a muscular, healthy man, of large frame. For sixteen years he had been a sufferer from a very painful tic douloureux of the second branch of the right trigeminus. His misery was indeed pitiable to behold, and the more so in a man whose living was obtained by hard labor, involving considerable exposure both by sea and land. Although of a stolid nature, like most of his race, the pain during an attack completely unnerved him; and a current of air, a high wind, rain, snow, fog, or thunder-storm, would serve to evoke this pain. Before coming under my charge for the first time, which he did some twenty months ago, he had been unavailingly treated by various physicians in this country, Germany and Sweden, and I plied him faithfully with arsenic and Duquesnel's aconitia in succession, in sufficient quantity to produce the physiological effects of each drug. After leaving me he passed into the hands of quacks. One dose of medicine was given him by a certain lady rejoicing in the name of "Mrs. Mallory," and he was free from pain for some seven months. When the pain returned he naturally enough hied him back to this estimable and scientific personage; but she had lost her charm. It so happens that at various intervals of time during the course of the sixteen years his pain had spontaneously ceased—sometimes for a few months, once for a year, once even for eighteen months. A significant fact to me was that, at the first onset of the malady, muscular twitchings along the line of the lower jaw had preceded the pain for several months, and the painful attacks themselves throughout the affection were always ushered in by a distinct interval of this same twitching. When, therefore, in May last the patient came to me to be operated on, I proposed to him that I should first stretch his facial nerve, and then, in case this did not succeed, perform the same operation upon the

proper branches of the Fifth Pair. Although I was well aware that muscular twitchings are the usual accompaniments of a tic douloureux, and are usually reflex disturbances from the diseased sensory filaments, I was yet rendered uncertain in this case by the distinct priority in point of time of the motor phenomena as to whether the customary order of things had not been reversed. I was particular to explain my reasons to the patient, and left the matter to his decision. On the 8th of May last, then, I operated, assisted by Drs. Frank W. Rockwell, Benj. F. Westbrook, A. H. P. Leuf, and Mr. Buckmaster, of Brooklyn, and Dr. Wm. L. Hardy, of New York. I cut down on the right facial nerve, laid it bare as it runs across from the stylo-mastoid foramen to enter the parotid gland, and stretched it so forcibly several times that the head was rolled from side to side. I employed a modified "Listerism" throughout the operation, to the extent of using carbolized solutions freely, sponges that had been carbolized carefully, carbolized cat-gut for sutures, etc. The edges of the wound were carefully coapted, carbolized silk laid over them, and over this a pad of carbolized gauze. The next day there was a typical Bell's palsy upon that side of the face. On the fourth day the dressings were removed, and it was seen that union by the first intention had been obtained. For four days after the operation there was absolute relief from pain, although some slight twitching persisted. On this fourth day the pain returned, quickly becoming much more intense than before the operation, and has remained so ever since. Singular to say, however, the twitchings have greatly diminished. At the present the motor paralysis continues, but has been steadily improving. The affected muscles present the electrical signs of degeneration (Entartungs reaction). The patient has entirely lost heart, and will not consent to operation upon the Fifth Pair, as had been intended.

My second case was a young man of 22—an American. For ten years he had had choreiform movements of the face on both sides, and of both hands. They were sufficiently strong to cause constant grimaces and to render the upper extremities useless for skilled handiwork. I decided to operate upon his facial nerve, and observe the effect before attacking any others. On June 16th, 1882, assisted by Drs. Benj. F. Westbrook, Frank W. Rockwell, and A. H. P. Leuf, I stretched the right facial, as in the first case, employing the same modified "Listerism," and in like manner coaptating the wound, and making use of Listerian dressings. On the fourth day the dressings were removed, and perfect union by the first intention found. A paralysis of the right face also ensued in this case, with the electrical signs of degeneration; but this has now, some two months after the operation, made considerable progress towards recovery. The operation has been entirely successful. There has been no twitching of the face on either side since. It is my intention, if the improvement is maintained, to stretch the brachial plexus of this patient in the autumn, and see what this will do for his hands. I shall, of course, report progress of the case.

The facial nerve has been previously stretched in eight cases; only once, however, in this country, and that by Dr. Putnam, of Boston. In a recent editorial in the *Journal of Neurology and Psychiatry*,* on the subject of Nerve Stretching, I have tabulated these cases; but the subject may be, I hope, of sufficient interest to members of this society to permit of my reproducing the details.

All the operations were done for mimic facial spasm.

* May, 1882.

Baum* was the first in the field, in 1878. Disease had lasted six years. Union by first intention. Patient was under observation for three months, and was cured, at least for this length of time. Left facial stretched.

Schüssler† operated on left facial. Disease had lasted eight years. Suppuration. Cure, but observation of patient only extended over 134 days.

Sturge and Godlee‡ operated on right facial. Disease had lasted six years. Patient 72 years old. At first paralysis; no pains for two months after. Patient under observation for three months.

Eulenburg§ stretched the left facial. Disease had lasted two years. Paralysis of face, electrical reactions of degeneration, and return of spasms.

Bernhardt|| obtained relief for only two days in one case, no paralysis ensuing; in another, paralysis, degeneration-reaction and return of spasms.

Putnam¶ operated on a patient who had suffered for three years. Facial paralysis for two months. Cure; but observation of patient only lasted three months.

Southam's** case had lasted two years and was fifty-three years old. Facial paralysis for six weeks. Cure; but observation of patient for six weeks only.

My summary of these cases was, in the article alluded to, as follows: "There are stated to have been six cures; but in one of these the time of subsequent observation is not stated, and this one must be excluded. This period of observation in the others—respectively six weeks, three months, and five months—is sufficient to show that marked relief was obtained, such as could be expected from no other remedy, but it does not warrant the assertion of a radical cure. The successes would constitute fifty-five per cent. In two of these successful cases, there was at first a facial paralysis. There were three failures, in two of which there ensued a facial paralysis."

The operation is not a dangerous one, if care be exercised; but considerable difficulty was experienced in isolating the nerve, which lies deeply in a small cavity that is not readily illuminated, even by a laryngoscopic head-mirror. I have proceeded thus in my patients: The

* Berlin Klin. Woch. 1878, S. 595.

† Berlin Klin. Woch. 1879, Nr. 46.

‡ Med. Times, 1881, No. 15, p. 631.

§ Centrbltt. f. Nervh., Nr. 7, 1880.

|| Zeitschr. f. klin. Med., Bd. III., Hft. I.

¶ Best. Med. Journ., 1880, Vol. II., p. 421.

** Brit. Med. Journ., May 28th, 1881.

mastoid process is felt for, and maintained as a guide. Commencing about an inch posteriorly to this, an incision is carried along, close to the cartilage of the ear, to about an inch anteriorly to this mastoid process. Another incision is carried downwards from this first one, along the anterior border of the sterno-cleido-mastoid muscle. These incisions should be carried through the fasciæ. Closely hugging the anterior surface of the mastoid process, the handle of a scalpel is used to break up the areolar tissue, until the little finger, inserted into the cavity thus made, can touch the base of the skull; in my two cases, the styloid process was felt, near which, through the stylo-mastoid foramen, the nerve issues. The cavity must then be enlarged sufficiently to catch sight of the nerve; but after the preliminary incisions, I have been exceedingly careful to use a blunt-edged instrument, like the scalpel handle, unless a further incision became absolutely necessary. When found, the nerve is encircled by a hook, and well stretched. It is then carefully returned to its place, all bleeding stopped, all clots removed, the edges of the wound accurately brought together, and the dressings applied as described. The patient is then directed to move the head and jaws as little as possible, and for the first twenty-four hours the food is such as did not require mastication.

What amount of force should be used in stretching the facial nerve, is as yet an undecided question. It is known what weight is necessary to rupture almost all the nerves of the body, but the facial has not been tested in this regard. I presume that I must have exerted, in my two cases, a force amounting to about six or seven pounds. In both, I rolled the head around the table, the patient being, of course, etherized; and in the second patient, each traction of the nerve was accompanied by finely tremulous movements of the face and eyelids.

I did not find it necessary to tie any vessels, except one small venous twig; and I cannot perceive the necessity for a free hæmorrhage, such as happened to one German operator. It was necessary to make use several times of Wight's forci-pressure forceps, but only for a few moments.

This operation of stretching the facial nerve is certainly an addition to our therapeutic resources that should be welcomed. The class of affection in which it has been employed—*tic douloureux*, and chronic spasmodic movements—is, while not absolutely incurable, yet extremely intractable. Duquesnel's aconitia, arsenic, iron, galvanism, have, from time to time affected isolated cures, but it can never be told beforehand whether they will be beneficial or fail, and they must be given for some time in increasing doses. Many, if not most cases, run the gauntlet of them all unaffected. If, therefore, we can have at hand a speedy and safe procedure that offers fair chances of relief, we should not undervalue it,

but should hasten to determine its limitations, in the hope that it may prove to be even more serviceable than any other. The cases whose histories I have collected from different sources display result enough to warrant us in giving the method a fair trial. As compared with neurectomy or neurotomy, it has been, I think, more successful; and it is a far less formidable operation than is the extirpation of Meckel's ganglion. The resulting paralysis passed off in all the cases in a few months, and is improving steadily in my own.

Led by these various considerations, we may rank stretching of the facial nerve as one of the few effective remedies for the relief of tic douloureux, and one that may possibly be even more successful than has been thought.

CARCINOMA HEPATIS.*

BY A. H. P. LEUF, M.D.

Male, æt. 60 years, born in England, and a cast iron worker by trade, presented himself at the neurological clinic of Dr. L. C. Gray, for examination, on August 22d of this year. The history, as taken at that time and on succeeding days, is as follows :

Average size and build. Tongue coated with a yellowish fur, in the middle and edges clear. Appetite is very poor ; always has been a poor eater. Bowels have been regular up to ten days ago, since which time they have been costive. Pulse 88, full and strong. He is melancholic, and has a feeling of extreme general debility. His legs feel so weak that he has difficulty in walking. He quickly tires in talking, and sometimes has difficulty, without apparent cause, in breathing. A striking symptom is a well-marked tremulousness, affecting all parts of the body, which makes him appear as though he were affected with disseminated sclerosis, or paralysis agitans. This tremor was always present except a short while immediately after having a long rest. The tremor was not rythmical. He has had this for years—occasionally remitting. “For upwards of twenty years” he has had what he calls “a heavy dead pressure” in the frontal region, which has increased during the present summer. Sometimes he has a shooting supraorbital pain. His eyesight is very defective, and has been so during the last five or six weeks, having appeared gradually but quickly. He says that

* Read before the Pathological Society, at one of its regular monthly meetings, on October 13th, 1881.

he cannot recognize people across the street. Has double vision every day, which is intermittent, but not regular in periodicity. Olfactory sense became very defective a year or two ago, and is so now. He cannot hear the tick of a watch with either ear, unless it is touched with the watch, but can hear a loud whisper, with either ear, at a distance of 2.5 meters. He cannot taste nearly so well as he used to, but taste is equally impaired in all parts of the mouth and fauces. Salt placed in the mouth feels gritty, and is slowly recognized at any part of it. His memory is very defective and utterly unreliable. He is constantly making contradictions. This defectiveness of memory began about two or three years ago, according to his own statement. His wife is unable to say anything positively about it. He remembers the distant better than the recent past. There is no pain whatever in the upper limbs, but some in the joints of the lower ones in damp weather. He complains of the greatest amount of pain in the hypogastric region, which is most usually very dull, but at times becomes "very pungent—very acrid." The same kind of pain, but much less in degree, is situated between the shoulders, in the hypochondriac and lumbar regions. He complains of a dull, heavy band-like pressure across his epigastric and hypochondriac regions. He firmly denied any possibility of syphilis.

He was so weak when a baby that no one expected him to live. When four years of age he had scarlatina. He says that from that time up to five years ago, he has suffered repeatedly from bowel complaints. In earlier life, while in England, he was repeatedly bled for this. He had a slight attack of piles five years ago. Thirty years ago he had "violent rheumatism" (non-inflammatory), and, up to ten years ago, he had frequent and severe attacks of it, but not so bad since then. He says that every joint in his body has repeatedly suffered during this period. He has a sister in London, six years his senior, who has been nervous for a long time, and has a tumor near the womb.

His present illness set in some time last April, while he was at work in the shop. It began with a sudden nausea, which was soon followed by "violent vomiting." He immediately started for home, and on his way was frequently compelled to sit in the gutter and vomit. When he walked it was with a dizzy sensation. He went to bed as soon as he reached home, and sent for Dr. B——, of Greenpoint, who made a diagnosis of malaria, and prescribed quinia. He went to work again in a week.

Prescribed iodide of potassium (.33 grm. t. i. d.), and bicarbonate of sodium (.5 grm. t. i. d.). Also .33 grm. of quinia every morning.

August 25th.—The patient being unable to come to the clinic, Dr. L. C. Gray requested me to see him at his home in Greenpoint, and take

a record of his cerebral temperature, and obtain what further history I could. The record of the cerebral temperature obtained was negative, but the following additional history was obtained.

On January, 1835, he fell backwards with 27 kilogrammes of iron in his arms, which fell on his chest and abdomen while he was on his back from the fall. This was the cause of a left inguinal hernia, which he has had ever since. Three years ago it troubled him so much that he applied to Dr. Knight, of New York, who told him that he had a double hernia. This was the first time he knew that the other side was ruptured. He was provided with a double truss. The gut only comes down when he is excited or in damp weather. He does not wear the truss now except when he goes out.

Apex beat of the heart was situated 1.25 cent. above the inner side of the left nipple. The second sound was heard distinctly in only a small circumscribed space, 2.5 cent. in diameter, at the junction of the left third rib, with the sternum very distinctly heard a blowing systolic sound which was most intense at the apex, and could be heard at the side, but not at the inferior angle of the scapula. The heart was beating feebly during the examination. Found large and small crepitant rales at the bases of both lungs, but most on the right side. The ensiform cartilage is large and depressed, so that the hyposternal notch appears concave. He has a very tender spot on his right side, at the intersection of the ninth rib by a vertical line dropped from the posterior fold of the axilla.

His liver is enlarged; extending downwards to a horizontal line through the umbilicus, and on the left, to a vertical line dropped from a point 2.5 cent. inside the left nipple. It is quite hard over its whole extent, and very much so in the epigastric region. It appears smooth on palpation. The superficial epigastric veins are slightly enlarged.

He also has a unilateral double chin, extending but slightly to the right of the median line. It feels exceedingly soft, and is apparently due to œdema. This swelling is now (August 25th) as large as a hen's egg, but was as large as a duck's egg when it had attained its maximum size on the 22d. He has had it a week. Never had any swelling of the lower extremities, or puffiness under the eyes.

His bowels have been very regular during the last three days. Defecation is at times painful. He must go to stool quickly, and, to use his own language, does "not get long notice." He urinates four or five times a day in "ordinary quantities," but it is "higher colored than usual." (A specimen was examined two days later, and found to be normal.)

Sneezing, coughing or breathing hard gives rise to a sharp hypogas-

tric pain, which sometimes causes him to cry out. His head feels very hot at night, so that he applies wet cloths to it ; but this does not trouble him during the day. His appetite has slightly improved. Brandy in any quantity, even a teaspoonful, without food, sets him "almost crazy," to use his own phrase. It excites him very much and prevents sleep. This has always been so, although he had continually used considerable quantities of malt liquors. Pulse weak and 92. Prescribed additionally nitro-hydrochloric acid (1 c.c.) and pepsine (67 grm.) t. i. d.

Aug. 26th.—His wife reported at the clinic that the pain had shifted to the right and had become sharper, but that he felt very little of it in front now. His head is no longer so bad, not having as much pressure as before.—T. C.

Aug. 31st.—To-day he said that the abdominal pain began in April, when gastric irritability also set in. The only time that he was troubled with vomiting was last spring when taken sick in the shop. Subsequently he complained of anorexia, which is now complete, and sometimes nausea. The sight of large quantities of food would nauseate him. Small quantities could be ingested without discomfort. Otherwise he is the same.—T. C.

Sept. 3d.—He is developing a sallow, straw-colored, cachectic complexion.* Suspect carcinoma of the liver. Discontinued iodide of potassium, and ordered morphia and atropia every two hours, also tincture of digitalis and brandy every hour. The brandy agreed perfectly well.

Sept. 5th.—Improved. Ordered mustard plasters over the liver until the skin gets red.—T. C.

Sept. 10th.—Complains of pain over the spleen. The tremulousness has almost entirely disappeared. Pulse 76, but a little weak. Increased the digit., morph. and atropia ; also gave one dose of .035 grm. of calomel. Urine was examined by Dr. E. H. Bartley, who found in it large quantities of leucine and tyrosine and of urea and the urates.

Sept. 12th.—Is feeling weaker. Added strychnia to the morph. and atrop.

Sept. 14th.—Feels still weaker. Tumor in the epigastrium is larger than when first noticed. It is more distinct in outline now, and not so tender as formerly. The patient was seen to-day by Dr. L. C. Gray, who confirmed the suspicion of carcinoma hepatis. The doctor elicited from the patient the fact that he sometimes had a distinct claw-like pain in his epigastrium, but this was not at all frequent.

Sept. 17th.—Epigastric tumor is 10 cent. in length, its lower border reaching the umbilicus. It extends toward the right to a line dropped

* Never in his life was he jaundiced.

from the nipple, and on the left side as far as a vertical line from a point 1.25 cent. to the inner side of the left nipple. Pressure on the left border of the tumor elicits a feeling as though fluid was passing under the finger ; it is a slight bubbling or gurgling feeling. To the ear, aided by the stethoscope, it sounds like coarse mucous rales. This sound is heard over the rest of the tumor, but not so markedly as at the left border. Get flatness on percussion, and the rest of the abdomen is tympanitic, without, however, being much distended. Pushing with my finger in the region of the gall bladder, I felt several hard masses recede, and could not find them. The stethoscope did not detect anything at this place. The liver does not extend any more to the left than the tumor, but downwards as far as the umbilicus, and from thence the lower border runs up in a gentle curve (toward the right), and disappears beneath the ribs at their junction with a vertical line dropped from a point 2.5 cent. external to the right nipple.

Cardiac valves are situated at the junction of the left fourth rib with the sternum. Apex beat behind the left nipple. Heart impulse weak. He gets very feverish at night, and thinks he is going to die, but morph. and atropia relieve him. His wife says " he always had the bad habit of looking on the dark side of everything." Pulse 90. Tongue is narrow, pointed, dry, and brown in the centre, with red edges. Increased the dose of his medicines. Anorexia has been so complete that he has not eaten anything for the last twenty-four hours. Ordered enemata of egg and milk with nitro-hydrochloric acid and pepsine, instead of by the mouth.

Sept. 22d.—Refused to take the enemata, and has not taken one. Feels weaker than ever. Pulse 84 ; temp. 37.5 deg.* Promised to take enemata. Tumor measures about 1.5 cent. more in diameter, and is tenser (harder) than before. It also appears nodulated, and so does the rest of the liver.

Sept. 28th.—Began to take enemata on the 22d, but would not take any more after the 25th. He has been delirious at times during the last week, and often was unable to recognize any member of his family. But he recognized Dr. B. F. Westbrook to-day, who was requested to see the case. Patient positively refused to take any medicine or food whatever. An infusion of poppy-heads was applied to the abdomen to lull the pain. Dr. Westbrook accorded with the diagnosis of carcinoma hepatitis which had been made. The patient died at midnight of October 1st, without any pain.

AUTOPSY.—The autopsy was held on the morning of October 3d. I

* I did not keep a record of his temperature, because I always saw him at the same time of day, and always found the temperature the same.

was assisted by Mr. Rice and Mr. Hewins, the former taking notes and the latter assisting at the examination. The following is what was found: Skin was sallow and shrunk; lower extremities slightly oedematous—this set in a few hours before death. The unilateral double chin had entirely disappeared. No bed sores. Body very much emaciated. The omentum contained a moderate quantity of fat. Its lower end was turned up, part being adherent to the gall-bladder, and some to the under surface of the right hepatic lobe.

The *liver* was enlarged and heavy, and apparently transformed into a cancerous mass, especially the left lobe, which on section was seen to be wholly composed of a yellow, cheesy material, some of which could be readily scraped off with a knife.* It was abnormally adherent to the diaphragm by its upper surface, and also directly to the cardiac end of the lesser curvature of the stomach. By its under surface it was adherent to the flexure of the duodenum. It also adhered to the spleen by the border of the left lobe, thus forming a continuous bridge across, and compressing the stomach. The gall-bladder was one-third full of bile. The surface of the liver was studded with what appeared as corpora lutea, enlarged to from one to three, or even more, centimeters in diameter. They were raised above the general hepatic surface, and had a yellow convoluted ("cauliflower") border, gelatinous in appearance, whose width was about one-third the diameter of the abnormal elevation. The centre was depressed (umbilicated), and appeared jelly-like and glistening, and dark-red in color. This also has an irregular, broken surface, as jelly would have. The border and central parts were resisting to pressure, and could not be squeezed out of shape. The border was tougher than the centre. Fig. 1 is a diagrammatic representation of the relative position of the deposits on the upper surface of the liver, while Fig. 2 shows the arrangement of the deposits internally. Inside this organ, between the larger deposits, were found smaller ones, averaging about one cent. in diameter. The smallest measured 1 m. m. and the largest 2.5 cent.

The *stomach* was pale and empty, and its pyloric third contracted to almost the same diameter as the duodenum. An ulcerated surface, about three cent. in diameter, was found at the upper and back part of the pylorus, extending from the stomach into the duodenum. The bed of the ulcer was slightly thinner than the wall of the contracted stomach. Its edges were almost twice as thick as the gastric walls. A shred of mucous membrane hung from the duodenal border of the

* The liver measured 23 cent. in width, 20 cent. in length and 10 cent. in thickness through the lobus Spigelii, which was its thickest part. This lobe was one large yellow, cheesy mass, 8.5 cent. long, 6 cent. wide and 4 cent. thick.



FIG. 1.—I represents the upper surface of the liver. The spotted parts designate the position of the cancerous nodules.

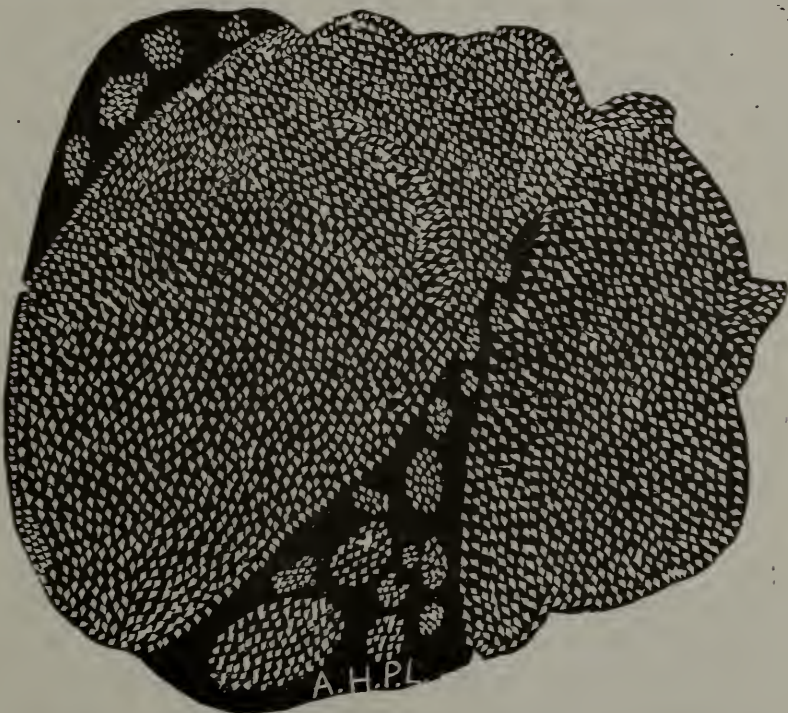


FIG. 2.—Represents the upper surface of a horizontal section through the liver. The spotted parts designate the cancer.

In the figures, the left lobe of the liver is on the reader's right, while the anterior border is directed upward.

ulcer. Before opening the stomach I felt the stomach and duodenum, but did not detect the ulcer and thought the pylorus was normal. The pylorus was dilated almost to the caliber of the duodenum. The flexure of the duodenum was stained yellow and grown to the gall bladder and liver. The *small intestine* were moderately distended with gas. The lower part of the ileum had several loops bound down to the rectum, sacral promontory and right iliac fossa so firmly that they could not be torn through. *Large intestine* empty, pale and contracted.

The *pancreas* was normal, except the head, which was very firm and largely made up of clumps of the same hard, cheesy matter that constituted the left hepatic globe.

The *spleen* was of normal size and consistence. The color of its capsule was exactly like that of a green slate, and on its outer (convex) and upper surface it had a yellow streak one cent. broad and about four cent. long. On making a section through this, the capsule was seen to be simply thickened and the spleen substance not involved and apparently normal.

The *kidneys* were dark red in color. The capsule was firmly adherent in some places. The corticle substance was very much increased in amount, and the medullary substance was correspondingly diminished. Some of the pyramids, or rather what was left of them, appeared upon section like circular disks one cent. in diameter and totally surrounded by cortical substance. The bladder was moderately distended.

The *heart* was very fatty, soft, pale and flabby. Right auricle and ventricle were dilated and filled with a dark clot passing through the tricuspid opening, which very easily admitted four fingers. The valves were thickened and roughened at their borders. The left heart also contained a continuous blood clot, which filled the auricle and ventricle, and extended into the aorta, innominate and right common carotid. The mitral opening felt tight around two fingers. The mitral valves were also thick and rough. The relative thickness of the walls of the right and left ventricle were as one to four respectively, and in some places as one to five.

Both lungs were extensively and firmly adherent to the thoracic walls; the right more so than the left. Some of the adhesions were too strong to tear and had to be divided with a knife. The lower and back parts of both lungs were hypostatically congested; the rest of both lungs, except their apices, were œdematous.

It was impossible to get permission to examine the brain and spinal cord.

This case presented quite a number of misleading symptoms, and there was no reason for suspecting hepatic cancer until the disease had already

made considerable progress. Thus many of his symptoms were apparently due to some obscure nervous disease, which in fact was at first thought to be their cause. His long standing tremulousness and the frontal pain (or "pressure") of more than twenty years' duration, together with his defective eyesight and double vision of four or five weeks' standing; his defect in smelling and of hearing as well as of taste; his amesia of recent and not of distant occurrences; and the band-like pressure across his epigastrium; all these pointed to some nervous affection. The apparent presence of fluid in the epigastric tumor, and of hard masses in the region of the gall bladder also pointed to some other trouble. The first, tremulousness, was, in my mind, due to his weak condition, superinduced, perhaps, by his long continued anorexia. He had been treated for this by Dr. B. F. Westbrook over two years ago, and with marked relief. His "heavy, dead pressure" in the frontal region I think was also due to his chronic gastric indisposition. His defect in memory, sight, smell and taste can be explained by his weak condition. I would explain his inability to remember the recent as well as the distant past by stating that, in the recent past his surroundings and experiences were not nearly so well impressed upon his mind as those which occurred in earlier life. He never *knew* the recent so well as the distant past; hence he obviously could not *recollect* it so well. I firmly believe that his inability to hear the tick of a watch while he could readily distinguish a whisper at some distance was purely physiological. He was evidently *sound deaf*. Being an iron worker, and having spent many years of his life at this trade, his ear naturally became accustomed to metallic sounds, and the tick of a watch being metallic, his blunted senses could not very well detect it. The adhesions of the liver to the stomach and spleen formed an unyielding barrier to the distensil action of the stomach, and also partly hindered its vermicular motion, and in this manner might the band-like epigastric pressure have been very readily induced. The detection of fluid at the site of the tumor might indicate cystic trouble, and was most likely due to fluid in the transverse colon or stomach. The hard masses in the region of the gall bladder were probably small masses of hardened *scæces*.

The reasons for examining the liver were three—bowel troubles of long standing (and piles); habitual use of large quantities of ale for many years; because a thorough examination should be made in all cases where doubt exists.

The diagnosis was based on the following facts. Always had been melancholic, and had now increased. Murchison* says, "I have been surprised at the frequency with which patients suffering from primary

* Murchison, Clin. Lect. on Dis. of Liver, p. 613.

cancer of the liver have traced the commencement of their ill-health to indigestion following protracted grief or anxiety. The cases have been far too numerous to be accounted for on the supposition that the mental distress and the cancer have been mere coincidences. A similar observation has, I believe, been made by Sir Robert Christison and by other eminent authorities." To illustrate, I will state that the patient would almost weep when telling me that his mother died with a "broken heart" because of bad treatment at the hands of her husband. He frequently said that his own heart would "soon break" and cause his death. Increasing debility and steadily progressive and rapid emaciation were characteristic. So also abdominal pains which sometimes felt claw like in the epigastrium; at other times dull, sharp or shooting. Enlargement of the superficial epigastric veins was very characteristic. The iron falling on him might have disturbed his liver sufficiently to favor degeneration. The rapid enlargement lead to a suspicion of amyloid degeneration or carcinoma, and the presence of the cachetic look and absence of suppuration, or of any wasting disease other than that of hepatic origin, confirmed the latter belief. His dyspnoea is explained by the oedema and congestion of his lungs, associated with a weak and otherwise defective heart. His pains were almost altogether due to local peritonitis, which was evidenced by the omental and intestinal adhesions in the different places noticed. I would explain his painful defecation and hurrying to stool in the same manner. The disappearance of the bad head symptoms immediately following the use of nitro-hydrochloric acid and pepsine certainly points to their being dependent upon gastric indigestion. I believe that the reason why he was not jaundiced is because there was no obstruction to the outflow of bile.

The main question to decide is, whether the hepatic carcinoma was primary or secondary? A secondary question is, had he cerebro-spinal trouble or not? His real trouble he dated back to April of this year, when nausea and vomiting set in, associated with the band-like feeling and hypochondriac, epigastric and hypogastric pain. He had more or less gastric trouble for years. Hepatic symptoms accompanied the accession of gastric symptoms from the very start. At no time had he had gastric symptoms, different from his long standing anorexia and flatulence, without marked hepatic symptoms. His attack in April probably was the beginning of his hepatic trouble, and seemed to be identical in its manifestations with what is commonly known as that "biliousness" which at times keeps one in bed for several days. Why he should have oedema of the submaxillary tissue, and almost wholly confined to one side, I am unable to imagine at present. From a careful study of this case, I am as firmly convinced as a person under such circumstances

can be, that there was present *no* cerebro-spinal trouble, and I may with equal confidence assert that there seems to me to be no reason to doubt that this was a case of primary hepatic carcinoma.

SPINA BIFIDA, OR HYDRORRHACIA, WITH NOTES OF A CASE SEEN IN PRACTICE.

BY A. F. HORTON, M.D.

Spina bifida is due to want of union between the dorsal portions of the vertebral plates. Chaussier has shown by statistics of the *Maternité*, at Paris, that one case of this occurs in one thousand births. This freak of nature may be found located in any portion of the vertebral column, but is usually situated in the lumbar region. The vertebræ are generally found with their spinous processes wanting, or only partially developed, and permitting the spinal meninges to protrude through the opening thus formed. As a rule, but one spina bifida is found, but in some instances there are two or more. Sometimes tumors of a cystic or lipomatous nature are mistaken for cases of spina bifida; then again we find them together, forming one tumor. The tumor is usually oval, its long axis corresponding with that of the spine; it may be either pedunculated or sessile; is originally quite small, but increases in size as the child grows, unless interfered with or terminating fatally very soon after birth. The integument covering the tumor may be normal in appearance, or ulcerated, very much congested, or exceedingly thin—the light being readily seen through it. In the higher grades the disease rarely exists by itself, but often is complicated with congenital hydrocephalus, ectopia of the bladder, of the heart, club feet, etc. When tumor situated in the lumbar region is large, and the spinal nerves are implicated, we have paralysis of the lower extremities and sphincters, the patient passing his urine and fæces involuntarily.

PROGNOSIS.—The prognosis in spina bifida is usually bad—death generally being the result. This may be due to several causes—either convulsions, ulceration of the skin with rupture of the tumor, followed by palsy or spinal meningitis, which speedily causes death in most cases; although there have been recoveries following rupture. Several cases are found in the books where persons afflicted with spina bifida have lived for many years, one reaching the age of fifty.

TREATMENT.—Most authorities agree that it is best not to resort to surgical interference in these cases, unless there be special indications for immediate treatment. If the tumor be small, covered with healthy skin,

and apparently not increasing in size, it is usually sufficient to put on a pad, or a concave shield well lined with cotton, thus affording protection from injury. Sir Astley Cooper obtained two recoveries by simply tapping, and then using gentle pressure. Erichsen treated a case successfully by this method. The tumor at birth was small, but increased in size until the patient—a girl—was thirteen years of age; it then measured twenty-five inches over its greatest convexity, fourteen and one-half inches in breadth. It was tapped nine times in eighteen weeks, 985 ounces of cerebro-spinal fluid being drawn off; the largest tapping amounting to 120 ounces, the smallest to 93.

Dr. Ellis Blake reports a case successfully treated by pressure alone, with a pad regulated by screws and elastic webbing. It lived to be eight years old, was a bright, intelligent girl, and, so far as I know, is living still. She never was able to use her legs, owing to paralysis. Again, when the tumor is pedunculated, it has been ligated or secured by means of a clamp placed on the pedicle; and Benard treated such cases with quills placed one on each side of the tumor and gradually tightened; but these methods have never been very successful. Again, cases have been treated by opening the sac, carefully placing the cord and spinal nerves in the vertebral canal, closing the tegumentary opening and using pressure. Gaupp cured a case where the tumor was the size of a child's head, by simply puncturing it eight times. The largest proportion of recoveries have occurred in cases treated by injecting the sac.

Professor Brainard, of Chicago, states that he "perfectly and permanently cured" three out of seven cases by withdrawing some of the cerebro-spinal fluid and injecting one-half ounce of water, containing two and one-half grains of iodine and seven and one-half grains of iodide of potassium. After a few seconds he allowed the injection to flow out, and then washed out the sac with tepid water. Then a portion of the cerebro-spinal fluid, which had been kept warm, was returned. When he had withdrawn six ounces of this fluid he returned two. Velpeau cured five out of ten cases, employing one part of iodine and one of iodide of potassium in ten of distilled water. Professor James Morton, of Glasgow, Scotland, claims to have cured seven cases out of ten by evacuating a small portion of the spinal fluid, injecting a small quantity of the following solution, and then sealing the aperture made by the needle with collodion. *Morton's Formula*: R. Iodinii, gr. x; Potassii Iodidi, gr. xxx; Glycerinæ, ℥ i. Misce.

My case is the child of Mrs. —, a strong, healthy woman, æt. 33, born in New York, multipara, six children. Labor pains commenced July 12th, at 10.30 A. M., and the labor was terminated July 14th, 8.20 A. M.

The attending physician, a gentleman of acknowledged skill, made a diagnosis of spina bifida, and considered the case so hopeless that treatment was uncalled for. July 30th, I was called to see the case, the mother wishing to know if something could be done which would give a chance for recovery. The child, a boy, was fairly developed for his age; the spinal tumor sessile, measuring $2\frac{1}{4}$ inches in length by 3 inches in width, was somewhat triangular in shape and nodular. Three-fourths of its whole surface was in a state of ulceration; the skin very thin, translucent, and of a livid color. Using gentle pressure with one hand, the cerebro-spinal fluid was easily driven back into the spinal canal; and placing the fingers of the other hand lightly upon the anterior fontanel, it was felt to fluctuate and become distended. This procedure seemed to cause considerable pain, and, as the child cried out, the fluid could be felt striving to force itself back into the sac, and, upon removing the pressure, the shriveled sac was seen to slowly fill and regain its former size and appearance. The child did not have hydrocephalus or any deformity of the cranium. There was talipes varus of the right foot, with talipes equinovarus of the left. I observed that the legs were paralyzed, and the joints could not be flexed easily, the right limb seeming the worst, there being more ankylosis of the knee joint. There was also incontinence of urine and fæces. The incontinence and paralysis, the mother said, had existed since birth. She had never seen it move lower limbs.

I asked Dr. Chas. A. Jewett to see the child with me, and we injected the sac with the following solution: potassii iodidi, iodinii, each, gr. xii.; aquæ distillatæ, ℥ii. Misce. Signa, minims x, as an injection.

Before using this, however, we drew off ℥i of the cerebro-spinal fluid for examination chemically. It was clear and colorless, and was found to contain a trace of sugar and of albumen. The fluid was instilled drop by drop into the tumor, gentle manipulation being practiced to promote diffusion. The needle puncture was subsequently sealed with collodion and court plaster. July 31st, child comfortable, tumor of a dark red appearance, not as full, and its walls less tense, painful upon touch, and much less translucent. August 2d, patient brighter than any time previous; tumor smaller, and less livid. The ulceration smaller, having healed about $\frac{1}{4}$ inch in width all around its outer edge. Very little pain upon pressure, child not complaining as formerly. There was less of the hard nodular feeling and appearance. Ordered mother to wash the ulceration three times a day with tepid water and castile soap, then to use the following lotion, allowing it to run lightly over ulcer. Liquor sodæ chlorinatæ, ℥i. Signa, ℥i in $\frac{1}{2}$ cup of water, as a lotion.

August 4th. Ulcer still healing, looking better, and measuring $1\frac{1}{8}$ inches in length by 1 inch in width. Added a few drops of carbolic acid

to lotion, and left marine lint to dress ulcer with. August 6th. Called with Dr. Jewett. Tumor smaller, ulceration healing, and measuring 1 inch in length by $\frac{3}{4}$ of an inch in width. Repeated injection, and told mother to continue the same treatment. August 8th. Child had been somewhat fretful; the ulcer was smaller; ordered carbolized oil as a dressing, the ulceration to be washed each time with the old lotion. August 10th. Tumor smaller, not so dark in color, less painful. August 12th. Ulceration almost healed, there remaining a small spot measuring $\frac{3}{8}$ of an inch in width by $\frac{1}{2}$ inch in length. August 13th. A general improvement, only a trace of ulceration left. August 14th. Tumor lessened fully one-half its size in volume, compared with its size before treatment. Ulceration healed. Repeated injection. The interest of this case lies not in the prospect of its absolute recovery, which is clearly impossible; but in the fact that it affords a demonstration of the value of the method of treatment pursued, viz.:

- 1st. Periodical injections of the Velpeau solution.
- 2d. The non-withdrawals of the contents of sac.

MEDICAL SOCIETY OF THE COUNTY ON KINGS.

A regular stated meeting of the Medical Society of the County of Kings was held on the evening of Tuesday, August 15th, 1882, at 379 Fulton Street, Brooklyn, the President, Dr. Jewett, in the Chair, and Dr. G. W. Wells, Acting Secretary.

The minutes of the previous meeting were read and approved.

There was no report from the Council, and no propositions for new members.

At the request of Dr. A. Hutchins, the regular order of business was changed, in order to allow him to report *in re* Dr. Mason deceased. That report was intended to be read at this meeting, but it had been deposited in the mail in error. He asked that he be permitted to offer the report, and consider it read by title; and it was so ordered.

The obituary report *in re* Dr. Fletcher, was also read by title.

DR. COLTON, in the matter of the obituary notice of Dr. Carpenter, reported progress.

The following papers were read :

By Dr. L. C. Gray: Account of Two Cases of Stretching of the Facial Nerve; By Dr. A. H. P. Leuf: Notes on Primary Carcinoma Hepatis; and By A. F. Horton: Notes on Spina Bifida.

There being no more business, the Society adjourned.

REMARKS ON DR. GRAY'S PAPER.

DR. HARCOURT apologized for not being present to hear Dr. Gray's paper read; still he would take the liberty to ask the doctor a question or two. He believed the subject considered had relation to facial paralysis. Now paralysis may result from

several causes—inflammation of the nerve; by hæmorrhage of the nerve; by atrophy of the nerve; by the nerve passing over a bony tumor. He would like to know what conditions of the nerve the stretching was to remedy, and also what amount of force is used in stretching a facial nerve.

Dr. Gray said the question would require a pretty comprehensive answer. There have been, he believed, upwards of 300 cases in which nerve-stretching has been employed. It has been done for almost everything, from neuralgia up to such a grave disease as locomotor ataxia. As he had stated in his paper, he had occasion to go over, in an article written by himself, the whole subject, and the conclusion was that it is still *sub judice*. Yet in certain kinds of cases very favorable results had been obtained. For sciatica, he believed there had been more than fifty successful cases. In some functional neuralgias there has been reason to suppose that it was a valuable adjuvant to the armamentarium of the surgeon. In regard to the graver forms of disease, we are somewhat at sea. It has been done three or four times for paralysis agitans with different results. In locomotor ataxia the mortality has been frightful. The percentage of deaths was twenty-three per cent., so that the sum total of this subject seems to be that for the graver forms of nerve disease, the remedy is not useful; while for the neuralgias, as, for instance, those caused by cicatrices, and reflex neuralgia, nerve-stretching appears to be a valuable agent. It is a harmless operation. Most of the nerves are superficial, and the mortality, except in the graver, organic diseases, amounts to nothing. It has been claimed by some that nerves can be and were stretched subcutaneously, *i. e.*, by putting a limb in different positions nerves may be stretched so that an incision is unnecessary. The beneficial effects are doubtful, except when there are adhesions around the sheaths of the nerves.

DR. JEWETT: The doctor asked also as to the amount of force necessary.

DR. GREY used force enough not to break the nerve. As to what amount, one's own judgment should be used. In the two cases, in which he had occasion to employ it, he did not know how much force he had employed. He was guided by his sensations. He presumed he pulled with a force of six or seven pounds, enough, in fact, to roll the head around on the operating table. In the second case when the facial nerve was pulled, the eyelids could be seen to quiver. After most of the cases of stretching of the facial nerve, temporary paralysis has followed. Tables have been given as to the amount of force to rupture a nerve, and a French gentleman has invented an instrument showing the amount of force needed. It is nothing more than a dynamometer with a hook attached to it.

REMARKS ON DR. HORTON'S PAPER.

DR. GRAY said the treatment by iodine has in his hands been most satisfactory and valuable, and it seems to have been so regarded in England. A solution of 10 grm. in glycerine, known as Morton's solution, is used, from the use of which very satisfactory results are claimed. Lister says it is the best treatment of spina bifida that has been found. He also states that he has tried antiseptic draining in that disease—first with a small drainage tube, then with two horse hairs, and lost his patient in each case. The speaker thought that in treating this disease a great mistake has been made in letting off the cerebro-spinal fluid. He does not think that is necessary. He thinks a great many of the patients have died from the loss of that fluid; therefore Lister and many others advocate the use of injections without the preliminary evacuation of the cerebro-spinal fluid. He was glad to see that the treatment of the case by the writer of the paper was appreciated so early. Whether iodine or the iodide of potash is used, he

presumed, made no difference, because it has been recently shown that the effects of iodine and iodide of potash are precisely the same, except that it requires much more iodine in proportion than iodide of potash to produce the proper physiological effects. He therefore did not think it made any difference whether the iodine or iodide of potash was used in the injection.

There being no more business, the Society adjourned.

Ἄσκληπιός



ὁ Σωτήρ

Χάρμα μέγ' ἀνθρωποισι, κακῶν θελκτῆρ' ὀδυνῶν.

Hymns of Homer, No. XVI.

PROLIFERATIONS.

—EPIDIDYMITIS.—Paint the testicle with a solution of iodoform. (R. Iodoformi, ℥ ss. Ether Sulph., ℥ i.)

—FOR BITES OF FLEAS, BUGS, MOSQUITOES, ETC.—The most agreeable and effective application to the skin is a tincture of the Pyrethum Roseum, made from the powder, shaken up in Eau de Cologne.

—AN AGED PEASANT learns that the village doctor, to whom he had advanced some small sums, has just passed away, leaving nothing but debts.

“There,” says he to his wife, with a delighted chuckle, “if I hadn’t had the good luck to have that fit of inflammatory rheumatism two months ago, where would my money be?”

—SPANKING THE SOLES of the feet has been effectual in making drunken men walk, and, also, in restoring animation when lost from the use of anesthetics.

—ASPHYXIA NEONATORUM.—Goyard’s method is to plunge the child at once into a vessel of water as hot as it can be borne by the hand (120° F.), and the arms are raised and lowered alternately to simulate the natural movements.

Dr. Theodore Lewis Mason was born at Cooperstown, Otsego Co., N. Y., Sept. 30, 1803. His father, David Mason, a lawyer, was a lineal descendant of the famous John Mason, one of the founders of Norwich, Conn., and for years a member of the Council, the Lieutenant-Governor, and Commander-in-Chief of the military of the State. His mother was a daughter of the Rev. Dr. Isaac Lewis, of Greenwich, Conn. Dr. Mason received a thorough classical education, under the preceptorship of his grandfather, and then entered upon the study of medicine at the College of Physicians and Surgeons, New York City. Registering his name as student of medicine in the office of the celebrated Dr. David Hosack, he received his degree of Doctor in Medicine from the College of Physicians and Surgeons on the 29th day of March, 1825.

At the request of some intimate friends of his grandfather he moved to Wilton, Conn., and there practiced his profession until the spring of 1832, at which time he came to New York City. In 1833 he married Katharine Van Vliet De Witt, the daughter of Peter De Witt, Esq., of New York City, counselor-at-law, and continued to practice his profession in New York until 1834, at which date he removed to Brooklyn. Shortly after he came to Brooklyn he formed a copartnership with the late Dr. George Marvine, a relation which continued to exist most happily and successfully for a period of over thirteen years.

When Dr. Mason moved to Brooklyn there was not any provision for the medical relief of the poor—a hospital for the reception of accidents was very much needed. A memorial from the Medical Society of Kings County, prepared by him, was presented to the Common Council, urging them to take action in conformity with a provision of the city charter, but without any immediate result. On the accession of Hon. Cyrus P. Smith to the mayoralty in 1839, the subject was again agitated, and the Council appropriated a small annual sum to the support of a city hospital, called, from its location, the Adams Street Hospital.

Dr. Mason became senior surgeon and president of the Board, and in conjunction with its other members, demonstrated by its successful management the necessity of such an institution.

A change in the municipal legislation occurred and the hospital was closed. But the public sentiment was aroused, the necessity of a hospital demonstrated, and again Dr. Mason's services were sought in the establishment of a city hospital, the liberality of a philanthropic citizen of Brooklyn making this feasible. Dr. Mason was influential in framing the charter, and in the selection of the board of directors and of the medical staff; as senior surgeon he labored faithfully in the performance of his duties until declining health compelled him to tender his resignation.

During the late Civil War he was extremely active in caring for the sick and wounded soldiers who were sent from the field of battle to the various hospitals of the Northern and Eastern States. The Long Island College Hospital received its full quota of troops, and was among the last hospitals from which, at the close of the war, the government withdrew its patronage. The institution received complimentary notice from the medical officers who had the disposal of the sick and wounded under their control.

Dr. Mason was connected with the Kings County Medical Society from the time of his coming to Brooklyn in 1834 until his death, a period of forty-eight years. In the earlier years of his membership he was active as a member and an officer. He was twice elected president, his terms of office being the years 1842-43. He was much interested with others in securing the first publication of the transactions of the Society.

But two members, who antedate this period, survive him, Drs. F. W. Ostrander and W. G. Hunt. His interest in its welfare and his activity therein stretched far into the second generation of workers. To his contemporaries the remembrance of his earnestness is vivid. He was a strong, self-contained worker, with a clear apprehen-

sion of a definite end in view, and a forceful, courteous patience that was self-sustaining till the end was gained.

His contributions to medical literature were infrequent. Much as he regretted in his later years that he had not recorded many important observations and experiences that had been the product of a life spent amid the activities of a community, in its progress from a village to a cosmopolitan centre, over a period of nearly fifty years, but his life, cotemporaneous with this municipal growth, was not of the cloister but of the arena. His name is associated with the organizations that have given character to the city, and his marked executive ability was, to a large extent, the reason of their being and the life of their development. His record for a clear judgment, in all his active career, is a well-defined remembrance, not only among those who were associated with him in executive control, but among those also who, in professional relations, were wont to welcome his counsel and avail themselves of his skill.

Dr. Mason was early identified with those interested in promoting a reform in the then defective sanitary regulations of the Cities of New York and Brooklyn. And in 1864 accompanied a committee of "The Citizens' Association of New York" to Albany as one of the medical members, to aid in securing a Metropolitan Bill of Health. The committee was entitled "A committee to promote the passage of an Efficient Health Law for the City of New York and Vicinity." It numbered among its members the most influential citizens and members of the medical profession of New York City.

As early as 1866 Dr. Mason's attention was directed to the fact that inebriety, to be successfully treated, should be dealt with as a disease—that the usual methods resorted to were prophylactic, not curative. His advice and assistance were sought by a number of citizens whose philanthropy took a similar direction as his own, and shortly after an institution, known as the Inebriates' Home for Kings County, was duly incorporated. Dr. Mason was one of the founders of the "American Association for the Cure of Inebriates," and was elected president of that organization in 1875, and filled the position for several years after that date. He wrote and spoke extensively on the subject of inebriety; and one of his addresses, "Inebriety a Disease," was afterward published and extensively circulated, not only in this country but in England, where it was quoted extensively in arguments urging the establishment of inebriate asylums in Great Britain.

Dr. Mason was a permanent member of the State Medical Society, whose published transactions abound in evidences of his interest in the work of that society. His name is to be found appended to many important communications and much laborious committee work. He was also member of the Amer. Med. Assoc. and member of the International Med. Assoc. held in Philadelphia in 1876; he was also Resident Fellow of the New York Academy of Medicine.

He was one of the founders, Life-member and Director of the Long Island Historical Society. In 1874 he was elected Vice-President of the "American Colonization Society," of which he had been for some time a member.

But this paper would be incomplete without a brief allusion to the religious life of the subject of this sketch. He was a member of the Reformed Dutch Church; identified closely with the most of its important boards, especially that of Foreign Missions, in which he took a great interest. With whatever church organization he may have connected himself, at any period of his life, he was active and zealous as a member, faithful and efficient as an officer.

In 1858 several leading physicians of Brooklyn, including Dr. Mason, conceived the idea of establishing an hospital there in connection with a medical school. He entered into the plan with his accustomed spirit and energy. It resulted in the organization

and ultimate success of the Long Island College Hospital. He was chosen by his colleagues the first president of the collegiate department, and he remained such until a year before his death, when age and failing health compelled him to resign—a period of twenty-one years. It was characteristic of Dr. Mason that, a serious purpose once formed, his powers of body and mind were devoted to its pursuit. No difficulties disheartened him, but rather nerved him for his work. No amount of labor, no exaction of his time, however great, exhausted his patient perseverance. His courage never failed in the presence of obstacles. This quality, added to his strong, disciplined understanding, and his high moral tone, made his friends trust and his opponents respect him.

Dr. Mason's health began to fail some months preceding his death, which resulted from pneumonia, and occurred on the 12th day of February, 1882, in the 79th year of his age.

(Signed),

ALEX. HUTCHINS, M.D., } *Committee.*
W. H. DUDLEY, M.D., }
A. OTTERSON, M.D., }

DR. GEORGE FLETCHER was born in Lancaster, England, April 23, 1816. He was the youngest son of Thomas Fletcher, a famous civil engineer under the British Government, and was brother to the late Right Rev. William Kew Fletcher, Archbishop of Bombay, who married Lady Audley, of Bath. Two of the nephews of the deceased were Col. Thomas Fletcher, of the Royal Artillery, and Capt. Robert Cotton, one of the immortal Six Hundred.

Dr. Fletcher began his studies at the College School, Frampton upon Severn, Gloucester, and, with a view of entering the Church, graduated at St. John's College, Cambridge. He altered his intention, however, and turned his thoughts toward medicine. He accordingly entered the laboratory or the then celebrated chemists, Messrs. Gall & Nunn, at Bury St., Edmonds, and afterwards studied under the direction of Dr. Clark, of Isleham, Cambridge, and Dr. Gedge, of Meldenhall, Suffolk. At the latter place he remained for several years practicing as apothecary.

Thirty years ago Dr. Fletcher came to this country, and since then has been a resident of Brooklyn. He did not, however, practice medicine here until 1875, when he reviewed his studies at the Long Island College, and obtained its diploma. He became a member of this Society the same year, and was Physician to Magna Charta Lodge, Order of the Sons of St. George, and Examining Physician for Acme Council, American Legion of Honor. After a brief illness, he died of acute pneumonia, May 20, 1882, at the age of sixty-six.

During his long residence in Brooklyn, the characteristic uprightness and honorable dealing with all won for him a multitude of friends. But more especially the many opportunities he found, during his practice, for benevolence to the needy, and for kindness to all, have made for him a record not soon to be forgotten. And, finally, your committee wish to join with many others in testifying to the pleasant professional relations sustained with our late member.

JOHN C. SCHAPPS, M.D.,
C. F. YOUNG, M.D.,
E. A. WHEELER, M.D.

—THE REGULAR MONTHLY MEETINGS of the Medical Society of the County of Kings are held at 8 P. M. on the third Tuesday of each month, at Everett Hall, 398 Fulton Street.

The September meeting will be held on the 19th.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

OFFICERS AND COMMITTEES FOR 1882.

<i>President</i>	C. JEWETT, M.D., 307 Gates Ave.
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(1878 to 1882.)

Drs. J. C. Shaw,
C. Jewett,
T. R. French,

Drs. G. G. Hopkins,
J. A. McCorkle,
A. Sherwell,
J. H. Hunt.

Drs. J. Byrne,
B. F. Westbrook,
G. W. Baker,

Chap. XI., Art. 2, of By-laws: "Any Member elected as Delegate to the Medical Society of the State of New York, who shall be unable to act as Delegate during two successive years, shall be considered to have vacated his position as Delegate."

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N. B. Sizer,

D. E. Chace.

THERAPEUTICS AND CLINICAL MEDICINE.

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PHYSICIANS' MUTUAL AID ASSOCIATION.

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A. W. Catlin.

R. M. Buell,

PROCEEDINGS
OF THE
MEDICAL SOCIETY OF THE COUNTY OF KINGS.

VOL. VII

OCTOBER, 1882.

No. 8.

CLINICAL OBSERVATIONS ON CYSTITIS IN
WOMEN.

BY A. J. C. SKENE, M.D.

These observations are presented for the purpose of adding to our literature some new facts regarding the treatment of cystitis.

That there is much need for more definite knowledge respecting the treatment of cystitis in women, becomes clearly evident when we consider how many still suffer from this most distressing affection. That our ideas on this subject are unsettled is well shown by the conflicting opinions expressed regarding methods of treatment and the results. In the literature of to-day we frequently find records of cures following certain kinds of treatment which when tested clinically by others, are found to be useless, sometimes injurious. So far, it appears that there is no recognized or standard treatment of cystitis in women by gynecologists. It rather seems as if each surgeon follows his own devices, and the results obtained are often said to be alike wonderful, although obtained by apparently conflicting systems of treatment. That we are drifting towards more definite knowledge is true. We only need more clinical observations, carefully recorded, to place this subject on a par with other departments of surgery which are admitted to be settled.

CASE I.—The patient was under my care from November 9, 1869, to February 10, 1870, while suffering from a cystitis, which began after one

of her confinements. She remained under my care for only a short time, circumstances calling her back to her home in the northern part of this State. At that time she had a well marked cystitis of the purulent variety. She was treated in the ordinary way by injections with some benefit. I also employed drainage part of the time, by introducing a catheter in the evening and letting it remain all night. This gave her great relief and permitted her to sleep—a blessing which she had not enjoyed for several years. She was improving in her general health, although her local disease remained about the same, or at least only a little improved. She expected to return for further treatment, but her husband becoming paralyzed, she was obliged to give up the care of herself to look after her family. From that time up to this last July, she continued to suffer tortures during the day, while she was obliged to be up and around attending to her household duties. At night she obtained relief from wearing the catheter, which she continued to use ever since she was taught to do so, twelve years ago. Her sufferings were almost beyond description, but having an iron constitution and extraordinary will power, she managed to live until this summer. During June and July last she failed more rapidly. Having heard of dilatation of the urethra as a cure for cystitis, she urged her physician to try that operation. He did so about the end of last July and repeated the operation one week later. The only effect of this treatment (as stated in the notes of her history, which I obtained) was to reduce the number of evacuations from 160 to 100 a day. Her physician then injected her bladder in the hope of relieving the inflammation and also overcoming the contraction, which was very marked. Immediately after the injection she was seized with violent abdominal pains, and rapidly developed a peritonitis which proved fatal on the second day.

On post-mortem it was found that the bladder was adherent to all the viscera around it; the result, no doubt, of a former pericystitis. Upon the posterior wall of the bladder, and directly opposite the urethra, there was a nipple-like projection outwards, with an opening at its apex large enough to admit a lead pencil. This protuberance had been produced by the long use of the hard catheter. The instrument had worn through the inner walls of the bladder, until the parts had become less resistant; it then pushed the remaining muscular tissue and peritoneum outward, and formed the nipple-like projection. At the time of the fatal attack, the catheter had made way through all the coats of the bladder except the thickened peritoneum. The rupture of the peritoneum was caused by the injection. That was the belief of the physician in attendance, and the history points definitely to the same conclusion. The bladder was firmly contracted and indistensible; its retaining capacity did not

exceed half an ounce. The muscular wall was over half an inch thick; the mucous membrane was all destroyed by the inflammation.

CASE II.—Is that of a lady possessing remarkably good organization. Married and had one child. Her age was thirty when her illness began. While riding horseback she was thrown off and sustained some apparently slight injuries. Her health, up to this time, had been very good, but from the time of her accident, September, 1878, she had symptoms of cystitis. She was residing in the far West at the time of the accident, and as I did not see her for several years after, and have not been able to correspond with the surgeon who then attended her, I do not know the relation which the injury sustained at that time bears to the development of the cystitis. I only know that the one followed the other immediately. The cystitis persisted, and her constitutional symptoms increased from time to time. She then returned from the West to New England to be under the care of her father, who is a physician of known ability and large experience. He gave her every attention and placed her in the care of a neighboring physician who has a high reputation as a gynecologist. Without giving full details of her treatment at that time, I may fairly state, upon information received from her father and her physician, that all the recognized means of treatment were tried, including complete dilatation of the urethra on two occasions. The cystitis was not at all relieved by the treatment, and her constitutional symptoms increased continuously until she became confined to bed. Having a highly sensitive nervous system, she suffered greatly from want of sleep, and the constant pain of cystic tenesmus. I first saw her in consultation about a year from the time when she was first taken ill. It was then that this much of her history was obtained. She continued under treatment for six months longer, and at the end of that time she consulted one of the best known and most worthy authorities in New York. He advised cystotomy and drainage for six months or longer, stating at the same time that, in view of the failure of her former treatment to give relief, there was nothing else left to be done. She declined to submit to the operation at that time. Her father then sent her to me about two and a half years ago. At that time she was obliged to urinate about every hour, night and day. She suffered from constant tenesmus, and her nervous system was greatly debilitated. Dr. McCorkle examined the urine for me and found that it contained a large quantity of pus, and there was a remarkable absence of epithelial cells. The Doctor's report was that the specimen was pus containing a small quantity of urine, and evidently came from a bladder which had entirely lost the upper layer of its mucous membrane. The diagnosis then made was chronic purulent cystitis. It appeared to me that the case was one which called for

cystotomy, but knowing the objection of the patient to that operation, treatment was undertaken and the results soon gave some slight encouragement. The constitutional treatment was at first chiefly tonic in character, and subsequently she took saline waters, lithia waters, bromide of lithia, and finally buchu, benzoin, tar, turpentine and the like. These last preparations, however, did not help her and were not long continued. The local treatment was first instillations of a warm solution of borax. Half an ounce was instilled at a time and repeated until from eight to twelve ounces were used at each treatment. The instillations were always made with very low pressure. As the sensitiveness of the parts diminished, the quantity used was increased up to one ounce, but never beyond that. Three months of this treatment showed improvement. There was less pain, and the patient's general health had improved considerably. About this time nitrate of silver was used, and later, sulphate of zinc, in solution of various degrees of strength, but this always caused pain. Indeed, the suffering caused by this kind of treatment was great, and the benefit which followed being very little it was given up. I then began to use instillations of an infusion of *hydrastis canadensis*, containing a small quantity of salicylate of soda, which was used to prevent decomposition of the infusion. I am now satisfied that the salicylate was of value in its effect upon the suppurating mucous membrane. The *hydrastis* was very faithfully used, first by myself, and subsequently by the patient, who made the instillations with unusual intelligence and care. The result was a gradual diminution of the pain and lessening of the frequency of urination. The pus diminished in quantity, and simultaneously young epithelial cells appeared in the urine and increased in number as the pus diminished. At the end of one year of treatment the local and constitutional symptoms had all disappeared. The urine was normal and the patient had fully recovered, excepting that she was obliged to urinate about every four hours. This was owing to contraction of the bladder. To overcome this, gradual distention was practiced. The patient was directed to retain her urine until discomfort, not pain, was felt. Injections were used, each time distending the bladder a trifle more, always stopping short of causing pain. About two years from the time she first came under my care she was perfectly cured of the cystitis and had regained her normal retaining power. Six more months have passed and there is not the slightest evidence of any return of the former affection.

CASE III.—This lady, 34 years of age, is married and had four children. She is said to have had retroversion of the uterus, which was held in its abnormal position by adhesions. She was treated for this displacement in the Woman's Hospital of New York, so she says, and while un-

der treatment a cystitis was developed which has continued ever since. After leaving the hospital she became pregnant and her sufferings increased. Two years ago, when her last child was four weeks old, she consulted a physician here in Brooklyn, who advised cystotomy, and soon after he performed the operation, using the cautery. She experienced some relief from the operation, but she still suffered very acutely. Being led to hope that in time the operation would cure her, she bore her afflictions for nearly a year, when she consulted me on the 5th of September, 1881. I then found her to have the tubercular diathesis, rather well marked, but there was no apparent disease of the lungs at that time. The vesico vagina fistula, made by the operation, was large enough to admit the little finger, and the drainage of the bladder was quite complete. Yet, strange to say, she had constant pain in the bladder and a desire to urinate. These symptoms I found to be due to inflammation and ulceration of the urethra and bladder below the fistula. The disease at this location caused pain and irritation, which provoked reflex action, such as that which arises from the presence of urine in the bladder, but in a much greater degree. General tonic treatment was advised, and local treatment employed to relieve the inflammation of the urethra and neck of the bladder. Locally she improved slowly. The pain and vesicle tenesmus subsided almost wholly, but she has not yet recovered completely. My object was to cure the local disease and then close the fistula. This I shall never be able to do. While the local disease is improving she is developing phthisis pulmonalis, which precludes all thought of operating to close the fistula. The facts in this history, which I trust will be borne in mind, are, that this patient was of a tubercular organization. That cystotomy did not cure her cystitis and urethritis, nor relieve her suffering to any marked extent.

CASE IV.—Six years ago I had a case of cystitis under observation, which illustrates the same facts in pathology and therapeutics as in Case III.

I shall give a very brief outline of the history, simply to show the result obtained by another method of doing the same operation. This patient was a married woman who had several children. She was of a highly nervous temperament, and came from a tubercular family. She consulted me for a cystitis, the cause of which is not recorded in her history. I treated her with injections for several months without benefit. I also dilated her urethra, with the same result. In fact, I believe she rather grew worse in place of better while under my care. Her general health failed noticeably at any rate, and she gave signs of a tubercular deposit going on in her lungs. Her friends urged her to enter the Woman's Hospital in New York. She did so, and was under the care of

Dr. Emmet, who performed cystotomy, which he did by incision and keeping the fistula open, first by his glass tube and afterwards by dilatation with the finger. After the operation she had an attack of pneumonia—at least she told me this when she returned from hospital. Upon her return home I found that she had been much relieved of her most urgent symptoms by the operation. Still there was cystitis remaining, and she still had vesicle pain and tenesmus. The tubercular disease of her lungs had progressed rapidly, and that portion of her lung which was involved in the pneumonia never cleared up. Her strength rapidly failed, and she died before the cystitis subsided.

I might add to these several other cases of the same kind, but these will suffice to confirm certain points which I desire to bring clearly to the attention of the Society.

The first case illustrates one danger in using the catheter which has not been noticed heretofore, so far as I know. One would hardly suppose that the catheter, retained at night only, would perforate the walls of the bladder; still in this case it did so, and led to the fatal issue of the case. This danger no doubt lies in the use of a hard catheter, which was used. Such was the crude state of my knowledge at the time in regard to draining the bladder that I used that kind of instrument, which I have ever since known to be very objectionable. The non-vulcanized rubber catheter is the only one which should be retained for any length of time.

This case also shows the great danger of trying to distend, by injections, a bladder which has for years been contracted from cystitis. I am satisfied that this practice is exceedingly hazardous, and at the same time it is entirely ineffectual, as a rule. The danger lies in the fact that the walls of the bladder are liable to be attenuated or softened at certain points, and hence very likely to rupture under undue pressure. Again, when the bladder refuses to distend under the normal pressure of the urine, after all traces of cystitis have disappeared, it is good evidence that the walls of the organ are hypertrophied and to a certain extent permanently contracted, or the whole organ is bound down by pericystic adhesions. Indeed, both of these conditions may be present, as in case first. It follows, then, that the only safe and sure way of distending a contracted bladder is by slow, gradual education. The patient should retain the urine as long as possible without causing suffering from acute pain, and once or twice a week a saline solution should be instilled at a pressure only a little higher than the normal pressure of the urine. The quantity used should be regulated by the feelings of the patient. As soon as she is painfully conscious of the distention the pressure should be taken off. I am quite satisfied that this method will succeed in curable cases,

if the patient and surgeon will take the required time and trouble. Case second is a fair example of what I have been able to accomplish in this way.

Forcible and extreme dilatation of the urethra is advocated in the treatment of cystitis by many surgeons otherwise well informed. Within the past few years the medical journals have contained the histories of many cases of cystitis said to have been cured by this operation. This is all quite erroneous. Generally, cystitis can no more be cured by dilating the urethra, than could a gastritis be cured by dilating the sphincter ani. It is a fact that if the urethra be destroyed by over-distention, incontinence will follow and the perfect drainage of the bladder will cure the inflammation; but verily the cure is worse than the disease. I am sure that the mistake in regard to the value of this operation in cystitis comes from its having been practiced in cases of acute cystitis which would have ended in recovery without any surgical treatment, and again in cases of inflammation of the upper third of the urethra which have been mistaken for cystitis. On the one hand the operation gets the credit of curing a disease which cured itself, and on the other of curing a disease which did not exist. It will be observed that in cases first and second the urethra was dilated with no benefit, and to these I could add many others which were treated in the same way with a like result.

Cystotomy, as a means of treating cystitis, is of great importance. There is, however, still some doubt in regard to its relative value and the indications demanding operation. That its merits have been over-estimated appears from the prevailing opinion that cystotomy will immediately relieve the pain and tenesmus and cure the cystitis in the course of time. This is not by any means true as a rule. Cases third and fourth were neither cured nor fully relieved from suffering by the operation. The same was the result in some cases operated on by myself. In cases where the inflammation is confined to the upper portion of the bladder, and limited to the mucous membrane, cystotomy will give relief and in time cure the cystitis; but if the neck of the bladder is affected, and especially if the patient is tubercular, the operation will not accomplish either of these results.

It will be observed that the cases which show the best results after cystotomy are, like case second, the ones which yield to local treatment by instillations. Cystotomy certainly gives more prompt relief; but when we take into account the operation, the discomfort of the patient from incontinence, and the second operation to close the fistula, the tax upon the surgeon and patient comes nearly to equaling that of the other method of treatment.

From all this I am inclined to believe that cystotomy, great as its value is in the treatment of cystitis, will become more circumscribed.

NOTE ON DELIVERY OF THE PLACENTA.

BY CHAS. JEWETT, M.D.

The diversity of usage which still obtains in the management of the third stage of natural labor, prompts this brief note, in the hope of eliciting the views and practice of the Society.

The points to which I wish especially to invite attention are the method and the time of placental delivery. These comprise a larger part of the treatment of the placental stage, the management of which is, perhaps, the most important office of the obstetrician in the conduct of natural labor.

The preferred method of delivering the placenta is that of Crede, of Leipsig. In Germany this method is now used to the exclusion of almost every other, and it would seem that so eminently judicious and rational a procedure could not fail of universal adoption. That such is not yet the case, is possibly due to the fact that in many of the standard works on obstetrics, the Credean method, if mentioned at all, is more or less imperfectly stated. The Credean procedure is not identical, as claimed by Barnes, with that taught by Hardy and McClintock, and long practiced in England. It differs essentially from the practice of the Dublin school, which consists in expelling the afterbirth by crowding the uterus downward in the pelvic cavity by pressure upon the fundus. It does not contemplate the mere expression of the placenta by compressing a uterus still flaccid from inertia, as might be inferred from the statement of one of the latest text-books. On the contrary, the essence of the German method is compression of the uterus during contraction, and with but slight downward pressure.

The Credean method is practiced as follows: The obstetrician laying his hand flat upon the abdomen of the patient, stimulates the uterus to contract by moving the abdominal wall in a circular manner over the uterus. The friction, gentle at first, is increased till the uterus contracts. At the height of the uterine contraction the upper segment of the uterus is firmly grasped with the hand, the fingers over the posterior, and thumb over the anterior surface. The placenta is thus expressed from the uterus, only enough downward pressure being used in the axis of the uterus to maintain a firm grasp. Failing in the first attempt, the

compression may be repeated with each uterine contraction till successful, friction being continued meantime to maintain the retraction thus far accomplished, and to provoke further uterine efforts.

It is the peculiar merit of this method that it, more closely than any other, imitates the natural process of placental expulsion. Moreover, it is designed to supplement the expulsive efforts of the uterus, not to replace them. It maintains firm retraction of the uterus till the afterbirth is expelled, keeps the uterine vessels securely ligated, and prevents the formation of deep coagula in the uterine sinuses. It favors, more than any other plan, permanent uterine retraction after the delivery of the placenta. Potent for good, it is incapable of harm.

Some practice is undoubtedly necessary to the utmost facility in this procedure, but the knack once acquired, other measures will be very rarely called for.

With reference to the time of placental delivery, the prevailing practice, in the judgment of the writer, favors too long delay. Dr. Playfair, following the teachings of McClintock, says that no attempt should be made at delivery of the placenta till twenty minutes after the expulsion of the child. Certain other obstetric writers sanction even longer delay. The arguments of Dr. Playfair in support of his practice are that time is thus allowed for recovery from the shock or exhaustion of the second stage, for the separation of the placenta, and for the formation of coagula in the uterine sinuses. While these would be valid reasons for delay under the old practice of placental extraction, they do not forbid early resort to the Credean method. As a rule, after the ligation of the cord, the sooner the uterus can be made to cast out the placenta the better for the patient.

There is surely no exhaustion of the uterus when it can be provoked to contract by gentle friction. Again, the very agency by which separation of the placenta is accomplished is uterine contraction and retraction. Against the dangers of post-partum hemorrhage, the chief security lies in the ligation of the uterine vessels by retraction of the muscular structures. Coagula in the uterine sinuses are a feeble barrier against hemorrhage. Moreover, thrombi extending into the intermuscular portion of the uterine veins are a positive source of danger, from their liability to infection. Promptness, again, facilitates delivery. By too long waiting the way may be narrowed by the contraction of Bandl's ring, and the difficulty of expulsion be thus increased. As a rule, then, the placenta should be expelled as soon as its function is ended; that is, as soon as the infantile circulation is established and the cord divided.

A word with reference to the use of ergot may not be out of place. Prof. Lusk disparages the exhibition of this drug before the afterbirth is

delivered, owing to its tendency to induce so-called hour-glass contraction. In my practice a drachm of the fluid extract of ergot is given by the mouth in every case—or its equivalent hypodermically—as the head passes the vulva. Under the above management of the placenta, it is expelled before the effect of the drug is developed. I should be unwilling to sacrifice the advantage gained by prompt and complete retraction of the uterus, through fear of a possible danger so seldom realized.

In conclusion, I submit the following summary :

Use constant friction or uterine massage after the delivery of the head, for the double purpose of maintaining retraction and provoking uterine effort.

Supplement the uterine efforts, if need be, by compression.

After the placental expulsion, continue friction till retraction is complete and permanent.

Use ergot on the birth of the head to promote the prompt and perfect completion of the third stage.

Aim to deliver the placenta, as a rule, directly after, not before, the ligation and division of the cord.

THE MEDICAL SOCIETY OF THE COUNTY OF KINGS.

A stated meeting of the Medical Society of the County of Kings was held on the evening of Tuesday, Sept. 19, the President, Dr. Jewett, in the Chair, and about forty-five members present. The minutes of the last meeting were read and approved.

The following proposals for membership were made: By Dr. Benj. Ayers, Dr. J. A. Blake, 674 Bedford Av.; and by the President, Dr. E. H. Knight, 67 Clinton Av., and Dr. C. N. D. Jones, 163 DeKalb Av.

THE COUNCIL reported acceptance to membership of Frank H. Ross, M.D., B. H. M. C., 1880, and Agnes Sparks, M.D., University California, 1879.

The papers of the evening were then read, as follows: By Dr. A. J. C. Skene, "Cases of Cystitis in Women." No discussion.

DR. ALEX. HUTCHINS exhibited to the Society samples of the "Girton Corset," and the "Divided Hygienic Skirt." He remarked that these articles of women's wear were presented at the exhibition held last spring in London, under the auspices of the National Health Society of Great Britain. They were ushered into public notice with such lavish encomiums by the *London Sanitary Record*, echoed by the *British Medical Journal* and the *Boston Med. and Surg. Journal*, that the speaker's curiosity was excited, and he obtained the samples from a friend in London. The "Corset" was worthless as a corset, and no lady would be likely to set aside the conventionalities of civilized society so far as to appear in the "Divided Skirt," even if its "Hygienic" pretensions were sustained. Dr. Hutchins urged that a very clear moral to be drawn from this exhibition was the reckless freedom with which medical journals advertise

editorially remedies and appliances which have been subjected to very limited observation and trial. In medicine even the authority of a great name cannot be accepted without investigation. It is a safe plan to investigate before endorsing.

Dr. SKENE said, in his opinion, the Girton Corset and Divided Hygienic Skirt, instead of being an improvement, were instances of a movement in the retrograde direction. As a corset and skirt they seemed to be an apology. If a flexible garment around the waist only were needed, it might do; but if a support of the mammæ, or a means of relieving the pelvis from the pressure and weight of garments, this corset is a failure; it is worse than useless. The object of any corset is twofold—to support the mammæ and relieve the pelvis from weight and pressure. He could see no improvement in the “Divided Hygienic Skirt.” He could not understand how it was an improvement over the pantalettes worn the present day. The Skirt is certainly not very graceful.

By Dr. Charles Jewett—“Notes on Delivery of Placenta.” No discussion.

In executive session, the President announced the death of Dr. C. F. Clark, and upon motion was authorized to appoint an obituary committee. He gave notice that said committee would be announced before the next meeting.

THE CHAIR declared the following members duly elected: Drs. J. L. Kortright, W. J. Doyle, R. Scrimgeour, F. L. R. Tetamore, H. C. Murphy, G. R. Barns, R. L. Dickenson, J. J. Kane, I. H. Pratt and J. Rankin.

On motion, the Society, at 9:20 P. M., adjourned.

Ἀσκληπιὸς



ὁ Σωτήρ

Χάρμα μέγ' ἀνθρωποῖσι, κακῶν θελκτῆρ' ὀδυνῶν.

Hymns of Homer, No. XVI.

PROLIFERATIONS.

—THE DISCUSSION OF THE CODE will, by order of the Society, take place at the October meeting.

—THE PHYSICIANS' MUTUAL AID ASSOCIATION.—The Society's Committee having this matter in charge will canvass the entire city within the coming month, with a view to increasing its membership. The work of the Association is so meritorious, and the expenses of membership so slight, that it is hoped the number of members from the physicians of this city may be largely increased.

—THE REGULAR MONTHLY MEETINGS of the Medical Society of the County of Kings are held at 8 P.M. on the third Tuesday of each month, at Everett Hall, 398 Fulton Street.

The October meeting will be held on the 17th.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

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Drs. G. G. Hopkins,
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A. Sherwell,
J. H. Hunt.

Drs. J. Byrne,
B. F. Westbrook,
G. W. Baker,

Chap. XI., Art. 2, of By-laws: "Any Member elected as Delegate to the Medical Society of the State of New York, who shall be unable to act as Delegate during two successive years, shall be considered to have vacated his position as Delegate."

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Drs. J. R. Vanderveer,

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Z. T. Emery,

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PHYSICIANS' MUTUAL AID ASSOCIATION.

Drs. W. W. Reese,
N. W. Leighton,

B. A. Segur,
A. L. Bartlett,

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S. H. Olmstead,

J. A. Jenkins,
A. W. Catlin.

R. M. Buell,

PROCEEDINGS
OF THE
MEDICAL SOCIETY OF THE COUNTY OF KINGS.

VOL. VII.

NOVEMBER, 1882.

No. 9.

LAPARO-ELYTROTOMY—REPORT OF OBSTETRIC
COMMITTEE.

BY A. S. CLARKE, M.D.

Your Committee on Obstetrics has chosen, as the subject of its report this evening, the *Obstetric Operations*, excluding *forceps* and *version*, and dealing only with those which are rendered necessary by some marked disproportion in size between the fœtus to be extracted and the maternal passages, soft and bony. These include craniotomy, embryotomy, Cæsarian section and laparo-elytrotomy. Your committee has decided not to submit any lengthy papers on these topics, but simply by its chairman to outline the subject, and leave it there for individual discussion by gentlemen whose experience in such cases will be interesting and instructive to the Society, believing that in the short time allowed by one meeting more can be gained in this way than by carefully prepared theses.

In deciding which operation to perform in any given case, so many factors enter, that no rule can be given for general guidance, but all things being equal, that one which offers the best prospect of saving the lives of both mother and child is to be preferred. This, of course, excludes craniotomy and embryotomy, and narrows the choice to Cæsarian section and laparo-elytrotomy. Unfortunately, statistics of maternal

mortality in these cases are so unreliable and inaccurate, that but little dependence can be placed on them, with the single exception of laparo-elytrotomy, or Thomas's operation (so called in honor of Dr. T. G. Thomas, who revived, perfected and introduced it to the profession). This is so comparatively recent, that every case operated on has been reported, and its result known. Since its revival by Dr. Thomas (we might almost say since its inception by him, as it was in one sense original with him, he being unaware of its previous history, so completely had it fallen into oblivion), eight operations are recorded (we quote from a paper on laparo-elytrotomy by Prof. A. E. Beckwith of Yale College)—two by Dr. Thomas, three by Dr. Skene, one by Dr. Gillette of New York, one by Dr. Himes and one by Dr. Edis, both of England. Of these eight cases, four mothers were in a hopeless condition before the operation was done ; one (Dr. Thomas) moribund from pneumonia, in which the child was saved ; one (Dr. Skene) mother exhausted by shock of craniotomy, and practically moribund, the child having been destroyed by craniotomy ; one by Dr. Himes of Sheffield and one by Dr. Edis of London, both children being saved. In the other four cases the condition of the mother was hopeful, but in Dr. Gillette's case the fœtus was dead and putrid. In the remaining three cases both mother and child were saved. To recapitulate :

OPERATIONS UPON WOMEN NOT IN HOPELESS CONDITION.

	NO. CASES.	SAVED.		LOST.	
		Mother.	Child.	Mother.	Child.
Thomas.....	1....	1....	1	0....	0
Skene.....	2....	2	2	0....	0
Gillette....	1....	1....	0	0....	1
	4	4	3	0	1

OPERATIONS UPON WOMEN IN HOPELESS CONDITION.

	NO. CASES.	SAVED.		LOST.	
		Mother.	Child.	Mother.	Child.
Thomas.....	1....	0....	1	1....	0
Skene.....	1....	0....	0	1....	1
Himes.....	1....	0....	1	1....	0
Edis.....	1....	0....	1	1....	0
	4	0	3	4	1

In a total of eight operations all the children, six in number, alive before the operation, were delivered alive, and all of the mothers whose condition gave any ground for hope of success were saved—truly a brilliant showing, and far ahead of the statistics of any sacrificial operation, or of Cæsarian section. It may be urged that too few cases have been reported to base any reliable opinion upon, and that these have all been

done by gentlemen specially skilled in such work, which is true, but we insist that any conservative operation showing such results, even in eight cases, is entitled to the most careful and intelligent consideration from the members of the profession, and that no obstetrician is justified in performing, or consenting to, any of the sacrificial operations, until this one has been fully discussed and rejected for satisfactory reasons, in any given case. The proportion of deaths of the mother from craniotomy and embryotomy is variously stated at from 37 per cent. to 50 per cent.; those from Cæsarian section are still more imperfect, but are probably higher than this. From laparo-elytrotomy, good and bad cases, 50 per cent. of mothers saved, and 100 per cent. of the children, excluding, of course, the cases of Skene and Gillette, where children were dead before operation.

The comparative difficulty of these operations will doubtless be told us by gentlemen present, who have had experience in them all, but certainly in our large cities, difficulty of any operation which is at all practicable should be no reason for excluding it and adopting one less satisfactory in result. We may not all hope to be able to do laparo-elytrotomy, as we cannot all become expert surgeons in any department, but some one can always be found who can and will perform it, and we owe it to our patients to offer them every advance and improvement science may suggest.

It may be said that this report is improperly headed, and should have been called "A Plea for Laparo-Elytrotomy." Your Committee confess that its principal object has been to call attention of the Society to this operation, as compared with the others mentioned, that it might not escape our thought in cases where its performance would be advisable. In these times, when so much that is new and valuable is being presented to us each day, much that is really valuable necessarily escapes us at critical moments, unless our attention has been specially called to it. It is for this reason, and with this hope, that your Committee submit this report, knowing the value of the suggestions which will be given by the gentlemen who may participate in its discussion.

DISCUSSION.

DR. WESTBROOK said he did not know that he was expected to give the anatomy of the particular operation which had been alluded to. He understood he was to simply describe the case in which he had done this operation post-mortem. As he understands it, the conditions under which the operation of laparo-elytrotomy is justified, are those in which the pelvis shall have been so narrowed from some cause—deformity of bones, the presence of a tumor, etc.—that it is impossible to deliver per vias naturales without destroying the foetus, and in which, even then, the delivery would be exceedingly dif-

ficult. That being the case, the uterus, with its contents, not being able to accommodate itself to the narrow pelvis, has been pushed up above the true pelvis, and lies above the ilio-pectoneal; that is, the cervix is above the superior strait. The question then is, which is the superior or most feasible plan of delivery; whether by craniotomy, by Cæsarean section, or by this later operation by Thomas—laparo-elytrotomy.

The points to be discussed in the anatomy of the subject, are the position of the cervix and vagina; the position of the peritoneum, and its relation to these organs; the position of the bladder and rectum, and their relation to the vagina, cervix and peritoneum; and the course of the ureter, as it passes down from the lumbar region to empty its contents into the base of the bladder. Also the relation of the abdominal walls to all of these organs.

The incision for this operation is made as if for the ligation of the internal iliac arteries, namely: the line of incision in the integument will be five inches or more, in length, commencing about half or three-quarters of an inch above the middle of Ponpart's ligament, and running parallel with it, or curved slightly upwards, to terminate an inch above the anterior superior spinous process of the ilium. Then the various muscles having been divided, the transversalis fascia is to be cut through, so as to expose the sub-peritoneal connective tissue. Then we separate the connective tissue of the pelvis, push it back from the pelvic wall, ligate the vessel when necessary, pushing the peritoneum over until we come in contact with the cervix and upper part of the vagina. The operation, so far as the cutting and getting down to the organs is concerned, is a simple one. The only difficulty will be when, as in one of Dr. Skene's cases, there is some deformity of the lower extremities, thus preventing the operator from getting at the parts.

Again, it is possible that there may be conditions which will prevent the separation of the peritoneum from the parts with which it lies in contact. As to the position of the uterus and vagina, they are pushed up and carry the broad ligament with them. The ovaries lie high up in the pelvis, and everything is within easy access. The hole made by the operation will have to be only about three inches deep, and, as it is a long incision, one gets to the bottom easily. The operator has the advantage of putting his finger into the vagina and passing it up and over the side of the cervix, so as to guide him in his operation. At the lower end of the wound will be the internal epigastric artery, which comes up to the middle of Ponpart's ligament. If it is encountered at all, it will be at the extreme lower end of the incision, and it will be easily pushed away; but if it has to be ligated, the incision is so very wide that it can easily be reached and tied. The position of the bladder is of interest. It is, of course, drawn up along with the cervix, and reaches up above the brim of the pelvis. Under normal circumstances, as in the case on which I operated post-mortem, the bladder lies behind the symphysis pubis and does not rise above the brim of the pelvis; but in these cases of narrow pelvis, where the whole uterus and cervix come up above the brim of the pelvis, they draw the vagina and bladder up with them, just as they are drawn up in the second stage of normal labor, only higher. It has been reported so in two cases, and it would naturally be supposed that this would be the case. The bladder, then, is high up and in front of the uterus, and out of harm's way for the preliminary incision. The rectum is so far back towards the posterior side of the pelvis that it is in no danger whatever of being wounded. *The ureter, then, is the only organ that is in danger.* We found in the operation which I did that the ureter could easily be identified. It ran through the wound, passed along the vagina and outside as it passed to its opening into the bladder. *I do not doubt that, unless there is some abnormal deviation, the ureter in such an operation could be identified and avoided.* The normal position of the ureter is to drop over the brim of the pelvis just at the proximal side of the

bifurcation of the common iliac artery; it then passes forwards and downwards, crossing the vagina at the level of the lower extremity of the cervix uteri, and dips slightly in the vesico-vaginal tissue, to finally reach the bladder at a point about two-thirds of the distance from the meatus urinarius to the cervico-vaginal junction. That is where it will be found in specimens and where it was found in this case.

The question then, is whether to open the vagina above the ureter, that is, up alongside of the cervix, or below the ureter, pretty well down below the level of the cervix. The advantage claimed for the high operation is that the ureter is pushed down in that case somewhere near its normal position. It is then out of harm's way, and as dilatation or traction proceeds, it will escape injury. In the case to which I refer I opened above the ureter. Putting my finger in the vagina, I pushed high up alongside the cervix, until it encountered the cervical-vaginal junction. I then opened at the extreme upper end of the vagina. Whether that is an advantage is for the surgeon to determine. The objection to the argument in this case, is that in case of a contracted pelvis the ureter is pushed out of its normal relation. We know that it may be pushed down, *if the bones of the pelvis are in their normal position*, but, the bladder and cervix being carried up out of the pelvis, the ureter would go up with them, and whether it could be readily pushed down towards the floor of the pelvis is a question of doubt. A dissection of the normal pelvis would not apply to that question *in an abnormal one*. In this instance, the vagina was opened above the ureter. The fingers were inserted, and the vagina was lacerated and an attempt made to introduce the fingers into the cervical canal. The fundus was then tipped to the opposite side, and, by dilating, and partially lacerating the cervix, I was able to perform the operation of version, and to deliver the child and placenta. The child was at about the period of the end of the eighth month of utero-gestation. In this case there was no laceration of the ureter, rectum, or bladder. In some of the former cases, Dr. Westbrook believed that there were repeated ruptures of the bladder. So much, then, in regard to the ureter. In regard to the peritoneum, that is so easily pushed aside, that, *unless there be abnormal conditions*, it offers no obstacle to the operation. In the case of a contracted pelvis, unless there were abnormal adhesions it would be almost impossible to lacerate it. The peritoneum, besides the facility with which it can be pushed up, can also be peeled off from the side of the uterus where the two layers of the broad ligament come together. He could demonstrate, in the specimen exhibited, that the peritoneum was uninjured. In an operation on the living subject there would be far less laceration than upon a dead subject. More time would be taken, and more careful dilatation would be made than in the specimen exhibited.

One advantage of the operation over Cæsarian section is that proper drainage can be secured. The wound is large and below the peritoneum, and the tendency of the pus is to gravitate downwards towards the pelvic cavity, and by establishing a proper system of drainage there would be no accumulation and no pressure toward the peritoneum, and great advantage would accrue. In addition, one would avoid wounding the uterus above the insertion of the peritoneum. He thought that there is great danger of lacerating the cervix. If he was not mistaken he should judge that, in the majority of operations done, the cervix has been lacerated. You have to work into it sidewise. The uterus has to be tipped over, and the traction is all to one side. But the laceration is below the peritoneum, and the drainage is free; and if you have hemorrhage there is a chance of controlling it; whereas in Cæsarian section the opening is through both layers of the peritoneum, and through the body of the uterus, and there is always a liability of having a discharge of pus and blood into the peritoneal cavity.

The case upon which he had an opportunity to operate was a woman, aet. 28, single, who had become pregnant and had been turned out of the house by her "friends."

She was wandering about New York one day last June, and, having no refuge, walked from somewhere up town to the ferry, came across the river and walked from the ferry to St. Mary's Hospital, where she arrived late in the afternoon in an exhausted condition, and begged to be taken in. She was put to bed, and the house surgeon endeavored to get her history, but on account of her condition that could not be obtained. He gave her some stimulants, and decided to wait till morning before questioning her. Towards morning he was called by the sister in charge. He found her moribund, and she died in a few minutes. He did not know exactly what to do, so he sent for the surgeon-in-chief, Dr. Byrne, but by the time Dr. Byrne arrived the conditions were such that he did not see any reason for operating. The supposition is that the child was dead, and there was no necessity for the operation then. The woman had had Potts' disease.

There was a large kyphotic curve in the dorsal region, with a compensatory functional one in the lumbar. Just below the twelfth rib, on the right side, was a transverse linear scar three inches long. There were also old cicatrices about the right groin and thigh—evidences of an old lumbar and psoas abscess. In spite of this, the body was muscular, the limbs straight and well-formed, and the pelvis presented no deviation from the normal type.

She had died of exhaustion. There was no attempt at expulsion of the foetus. The cervix was tightly contracted—there was difficulty in introducing the index finger. The size of the child was such that there was no doubt that the mother had reached the end of the eighth month of utero-gestation. The operation (p. m.) was made in the presence of Drs. Byrne, Bunker, Jewett, and other gentlemen, and every point was carefully noted, particularly the location of the ureter, which he had described. After the operation was completed, Dr. Leuf dissected out the pelvic organs, and examined carefully the ureter, rectum and bladder, and found no laceration. The specimen was then exhibited and described. The uterus was laid on the uninjured side, and the side upon which the operation was done was placed uppermost. You will see that you can identify the broad ligament on that side. The laceration of the uterus will be found just in front of it. The vagina will be seen running down over it, the rent in the vagina being mainly longitudinal. The rectum is carefully laid behind. The vagina can be identified by any one who cares to manipulate the specimen.

Dr. A. J. C. SKENE : As far as this operation is concerned, it remains precisely where it was when Dr. Thomas first devised, described and performed it. Nothing has been taken from it, nothing has been added to it of any real value, except what Dr. Westbrook has given us to-night, regarding its anatomy. Now so far as the history of the operation is concerned, one fact is of interest and importance to me, because it coincides with the history of nearly all of the important operations in surgery and discoveries in medicine. That which has proved to be of real value in medicine or surgery has generally remained about as it was when first introduced. Take as an illustration Sims' speculum. Several hundred modifications have been introduced, but nothing acceptable has been offered as a substitute. That speculum, in spite of the medical intelligence which has been brought to bear upon the subject, remains to-day as it was when first invented. It is now twelve years since Dr. Thomas first introduced this operation, and it has had an excellent record. For that very reason, perhaps, very little has been said about it, and very little has been written about it, comparatively speaking—simply notices of what has been done by those who have tried it, with one exception, and that was by Dr. Garrigues, formerly of this city, now of New York.

Dr. Garrigues wrote an elaborate article upon the subject, in which, however, there was nothing original. He simply did some most valuable work in preparing a resumé of the entire literature of the subject. It is true that he made some observations on the anatomy of the pelvis, which he described very elaborately and in a somewhat complicated manner; but the relation of all that to this operation is really *nil, because he made his observations on the normal pelvis*. He deserves credit for having done some good clerical work, but when he attempts to give his anatomical researches as a guide to the performance of this operation, we must decline his proffered instruction. When the conditions described by him exist, the operation is contra-indicated. When the anatomical relations of the pelvis are *normal*, the operation is never called for! If he had been fortunate enough to give us the anatomy of a malformed subject or of a series of malformed subjects, I have no doubt that they would have been of great value; but as that has not been done, I am free in saying that no valuable contribution has been made to the anatomy or practice of the operation. It remains, therefore, as it was at the outset. In fact, I think the suggestion of Dr. Westbrook regarding the fallacy of basing the steps of the operation upon the anatomy of the normal pelvis is the first allusion that has been made to it. I hold, right or wrong, but it is according to my judgment, that Dr. Thomas is the author of the operation, and we have it from him perfect as any operation in surgery—at least it has not been improved since he introduced it. I hold him to be the author, because, while others suggested it, some had admitted it to be feasible, and others attempted, he did it and showed us how to do it. He knew nothing about the literature of the operation, and literally rediscovered it. And while on his way to perform the operation, the fact was pointed out to him that the operation had been suggested by others before him. But still I hold that he is the author, because he demonstrated the *fact* that it could be performed. So much, then, with reference to the operation as it was introduced by Thomas, and so much with reference to the anatomy.

I think Dr. Westbrook has made two very important observations. The first is with reference to the ureter, which we all had been afraid of wounding while doing the operation. We gain from his demonstration that nothing is to be dreaded from that. Then again, with reference to the laceration of the bladder, which has occurred twice in my own practice. In another case when the anatomy was obscured by the products of former disease, I opened the bladder. It was in a position where I never expected to find it—at the anterior superior spinous process of the ilium. I encountered it, not thinking that the organ could be found in that position. Dr. Westbrook has given us a valuable contribution with reference to the position of the ureter and to the possibility of protecting the bladder. I have always maintained that a laceration of the bladder need not of necessity occur in the operation, and Dr. Westbrook has demonstrated that which I maintained was capable of demonstration, that the bladder can be avoided. That fact, then, is established, but even if it were not, I believe it a very trivial accident to lacerate the bladder. If a catheter is worn during convalescence, I think the fistulous opening heals easily. If it does not, why, it is a pleasant pastime for surgeons nowadays to close a vesical opening of that kind. But if we exercise care in all cases this need not be a barrier to the operation.

I might say a word with reference to the indications for the operation. I consider that they are simply these, that where the superior strait is so contracted that the delivery by the forceps or by version is impracticable, it is then simply a question between craniotomy and the Cæsarean section. Now if we compare it with craniotomy, I think no one will hesitate to give it the preference. I do not mean this comparison to apply in cases where a false diagnosis has been made and the life of the child has been sacrificed in trying to deliver it by forceps or turning. I refer only to cases in which

there is every possibility of saving both mother and child. The history of the operation, under favorable circumstances, shows that there is no reason why the child should be lost if it is alive when the operation is begun. In my second case I found prolapsus of the cord and an arm presentation, and still that child is alive to-day. In my last the complications were the worst that could be imagined, yet the child was saved. This to my mind settles the question of danger to the child.

When the pelvis is narrow at the superior strait and the child is alive, the operation of Dr. Thomas should be resorted to. Craniotomy, under these circumstances, would be malpractice. As to the simplicity of the operation as compared with craniotomy, I think that any one can do the former much easier than the latter. Craniotomy, apart from its being one of the most horrible operations in the whole region of surgery, is exceedingly dangerous. It has been my misfortune to perform it several times, and I have adopted a way of my own for doing it—placing the patient on the table, as for a gynæcological operation, and using a Sims' spectrum, in order to see how to manipulate. In that one can perforate the head and extract the bones one by one and carefully protect the parts of the mother. Still, it is a long, tedious, troublesome and difficult operation, requiring far more nicety of manipulation than laparo-elytrotomy. When you come to compare it with the Cæsarian operation, then we have to encounter an amount of literature and a variety of opinions which makes it less easy to settle the question. Some claim that the percentage of recovery from Cæsarian section is quite equal to that of Thomas's operation. In our neighboring city, Philadelphia, Dr. Harris would almost persuade us to do Cæsarian section, so favorable is the light in which he places that operation. But when we remember that in the one operation all we do is simply to divide the integument, the abdominal muscles and vaginal walls, and in the other you have to open the peritoneum and the walls of the uterus, I think there can hardly be any doubt in the mind of any reasonable man that the one operation certainly is much more dangerous than the other. I know nothing about Cæsarian section, practically; but it does seem to me that dangers in abdominal surgery are largely in dealing with the peritoneum, and that there is little danger if you leave the peritoneum uninjured and the uterus unopened.

I do not think that I need to make any reference to the simplicity and rapidity with which this operation can be performed as compared with Cæsarian section. If that much is true with regard to Cæsarian section, how much more might be said against Poros' operation? One of the mysteries of medicine to me is how a sane or intelligent obstetrician can persuade himself that Poros' operation is preferable to laparo-elytrotomy or Cæsarian section. I have only heard one argument in favor of it, viz.: the great advantage of Poros' operation is, that it prevents the possibility of the patient to encounter a second delivery. It occurred to me when I heard this that the observation of the nurse of my second case of laparo-elytrotomy was an eminently wise and logical one. "Why," she asked, "are you so particular to close the opening? Why not leave it for future use or else make such alterations in the party of the second part as will prevent its ever being needed again?" Compared with the three other operations, I am free to say that it is infinitely superior, so far as I am able to judge. I have never seen the Cæsarian section. I have twice seen the removal of the uterus and its appendages for a fibroid tumor, and I am free to confess that although I am not particularly afraid of surgical operations, I hope it will never be my fortune to perform Poros' operation; while, on the other hand, I have not the slightest objection to performing Dr. Thomas' operation twice a day, if need be. As far as the success of the operation is concerned it has been remarkable. I know of no important operation introduced in modern times which presents so good a record.

A question has often occurred to my mind—why is it that that operation has not be-

come much more popular? I remember having recently seen a little girl delivered in that way. She is now nearly eight years old, and since the time she was delivered very little has been done to advance that operation. Cæsarian section, Poros' operation and craniotomy have been performed many times during that time; but why is it that an operation presenting so many advantages has been so kept in the background? Dr. Thomas says the fact surprises him, and he does not understand it. I have endeavored to find an answer to this question. In the first place, this operation has been offered as a substitute for other operations. Now, when anything is introduced to accomplish a thing which has never been accomplished before, of course the profession takes hold of it, and it at once becomes popular. But it is entirely otherwise when you endeavor to substitute one method of procedure for another, although the one offered as a substitute may be infinitely superior to any other. Then again, nearly every one in the practice of medicine has acquired what might be called expert skill in the practice of obstetrics. We have those who perform obstetric operations every day, who are not surgeons in the general acceptance of the term. I know that to be a fact, because I have seen some of my friends do the most difficult operations in obstetrical surgery, who under no consideration whatever would do any of the ordinary operations in general surgery. So long, then, as obstetrical operations are performed by such men, they will prefer their own old familiar ways of operating. More, may it not be that counsel is not always sought in cases requiring this operation, but that they are managed in the old way? Then there is, perhaps, one other explanation. It is a curious fact that at the time that Dr. Thomas introduced this operation, he retired from general obstetrical practice. He has therefore not had the advantage of seeing cases which might have fallen to his lot, demanding his operation, nor of being called in consultation so often in obstetrics as in other respects. That may be one explanation of the silence on the subject, so far as he is concerned. The same thing has happened to myself. While my obstetric practice never was very large in this city, still I came within sight of 300 a year—say 289 in one year—and from that I dropped down to almost a baker's dozen immediately after I performed my second operation. I delegated that portion of my practice to another. Yet another explanation of the neglect of this operation may be found by looking at the more unpleasant side of human nature. If Dr. Thomas had performed that operation in France or Kamschatka, it is possible that our far-sighted disposition would have enabled us to see its advantage, and to immediately take hold of it with greater enthusiasm. That does not, however, hold good on the other side of the water, because they are far enough off to feel the enchantment which distance gives; so that does not exactly explain why it has not been accepted and practiced to a greater extent in the old world. Finally, there may be still a great many obstetricians who will not or do not undertake operations because it has not had the sanction of the old masters. But in time I feel sure it must take its proper place in the practice of obstetrics. It will stand side by side with the great operations—give honor, power and glory to our art.

DR. FRANCIS H. STUART had never performed the operation in question and therefore could not speak from personal experience, but theoretically and historically he would be willing to endorse it. He thought all had been said that could be said, and that it was well said.

DR. CHARLES JEWETT: It has always been a matter of surprise to me that the profession have been so slow in adopting Thomas' operation. It is now, I think, some twelve years since its introduction, and yet in that length of time we have had a great many Cæsarean sections. Even in this country, in the year 1880, five Cæsarean

sections were done, and only one, I think, of the modified operation of Thomas. Yet this is the history of every great discovery. Personally, I have always been an earnest advocate of laparo-elytrotomy as a substitute for Cæsarean section, except in those rare cases where it is contra-indicated by obstruction in the vagina or uterine cervix.

The theoretical advantages of laparo-elytrotomy seem to me sufficient to establish the superiority of that operation. In the Cæsarean section the peritoneal cavity is opened and the uterus incised. The peritoneum is exposed to the evil influence of atmospheric germs, and to the possible escape of lochia from the uterine wound. The latter risk is especially great, from the tendency of the uterine incision to gape even when carefully sutured. Hemorrhage, too, adds greatly to the dangers of hysterotomy, especially if the placental seat is incised, which happens in about one-third the cases. In the modified operation, on the other hand, sepsis is in great measure preventable by through and through drainage and the hemorrhage is controllable. Clinically, the value of this operation can hardly be claimed to have been determined as yet, and especially for the reason that the operators thus far have been surgeons of exceptional skill. When the operation gets into the hands of the profession at large, it is quite uncertain whether its present record will be maintained.

As to putting this operation against craniotomy, Dr. Skene, so far as I know, stands alone in his views among a number of authorities who have written upon the subject. I am inclined, however, to think that he has the best of the argument so far, and for this reason: the statistics of craniotomy in cases where the conjugate is $2\frac{1}{2}$ inches or less show only $62\frac{1}{2}\%$ of recoveries, and the percentage of recoveries in all cases, favorable or unfavorable, is only about 80 %. I think the statistics of laparo-elytrotomy are better than that. There is, however, a certain class of cases in which craniotomy is still necessary. When the head is impacted in the pelvic cavity, or arrested at the outlet of a narrow pelvis, as in the case which I reported to the Society in July last, that may be the only practicable method of delivery. So Cæsarean section is sometimes the only resort, as in case of obstruction in the vaginal canal or cervix-uteri. For it is essential that the cervix should be free and that an unoccupied portion of the vagina should be capable of being lifted above the pelvic brim in order to make the Thomas operation feasible.

One word further in regard to craniotomy. A statement recently went the rounds of the journals to the effect that the combined experience of Drs. Thomas, Barker, Taylor, Penrose, Wallace and Chatard covered $2\frac{1}{4}$ centuries. They had delivered 45,000 women; and yet in all that number they had done craniotomy less than twenty times. This is a significant statement, and it reflects upon the skill of most of us who do craniotomy oftener.

A singular misapprehension obtains, among certain writers, as to what laparo-elytrotomy has accomplished. So good an authority as Dr. Harris, of Philadelphia, makes the statement, in a recent article in the American Journal of the Medical Sciences, that this operation has saved only one-half the mothers and a similar proportion of the children. This statement is hardly just. All the mothers who were lost were in a hopeless condition before the operation; and of the four children lost, one was in a putrid condition before delivery; another had sustained perforation of the head in attempts at craniotomy; another was delivered alive, but moribund from an advanced stage of pneumonia in the mother, and the last death which he charged to this operation occurred eighteen days after delivery and from causes entirely independent of it. It would have been a better statement of the facts had he said that, practically, laparo-elytrotomy has saved 100 % of the children, and a similar claim would almost be justified in case of the mothers.

The value of Cæsarean section is greater than a casual examination of its statistics

would indicate. The percentage of recoveries in the total of reported cases is below fifty. Our own country, through the labors of Dr. Harris, probably possesses more accurate statistics of this operation than does any other. By the kindness of Dr. Harris I learn that the total number of cases in the U. S. to the present date is 124 operations, with 52 recoveries—41+ per cent.; in North America, 133 operations, with 59 recoveries—44+ per cent. To these figures is to be added an unsuccessful operation done about a week ago at Charity Hospital, N. Y., by Dr. Garrigues. These statistics do not fairly represent the value of the Cæsarean section, because they comprise so great a number of unfavorable cases. The larger proportion were cases in which the patients were exhausted from delay, or prolonged attempts at delivery, or both. Another important fact is that the great majority of these operations lacked the advantage of modern surgical methods, and especially of Listerian precautions. On the other hand, Dr. Lusk alludes to several series of operations done in rural districts—these cases, amounting to 61 in number, had apparently no other advantage than that of healthy surroundings. Yet the percentage of recoveries was 78. Dufeilhay finds 81 per cent. of recoveries in timely operations, and Dr. Harris claims 76 per cent. of successes for selected cases in this country. The total number of Porro operations to date is 95. Of these, 43 have recovered—45+ per cent. (Dr. Harris). As a hospital operation the Porro method has been singularly successful. In the Vienna hospital, where not a single case of the classical operation has recovered in the last century, 8 out of 11 Porros have been saved. In the Santa Catarina at Milan 6 out of 8 cases recovered. Yet the value of this operation is still undetermined. Singularly enough, in Italy, the home of Porro, it is being superseded by another operation, hardly mentioned in the standard works on obstetrics. This subject will be fully presented in the January number of the *American Journal of the Medical Sciences*, by Dr. Harris.

DR. CLARK, in bringing the debate to a close, said the object of the committee had been accomplished. He thought the minds of all present had received an awakening on the subject which could not fail to be of benefit to themselves and to their patients. He thought this operation was one of the most important in obstetric procedure in such cases as are fitted for it. If it were not so late in the evening he would like to say a few words on the subject as compared with craniotomy. However, the object of the committee had been attained, and he would leave the discussion where it is.

THE MEDICAL SOCIETY OF THE COUNTY OF KINGS.

A stated meeting of the Society was held October 17th, 1882, the President, Dr. Jewett, in the chair, and about eighty members present. The minutes of the previous meeting were read and approved.

The following proposition for membership was made : Dr. John Bowen, Kings County Insane Asylum, by J. C. Shaw, M.D.

THE COUNCIL reported acceptance to membership of J. A. Blake, M.D., Col. P. & S., 1869; David Myerle, M.D., L. I. C. H., 1882, and C. N. D. Jones, M.D., L. I. C. H., 1882.

The report of The Obstetric Committee on Obstetrical Operations was announced to be read by Dr. A. S. Clarke, Chairman.

Before reading the report Dr. Clarke said that it had been expected by the Committee that Dr. T. G. Thomas would be present to discuss the subject of the report, with particular reference to the operation which bears his name, namely, laparo-ely-trotomy, but information had been received that it was impossible for the Doctor to be present. The report was then read. The discussion that followed was participated in by Drs. Skene, Westbrook, Stuart, C. Jewett, and closed by Dr. Clarke.

The Society then passed to executive business.

THE CHAIR, in calling up the discussion of the Code of Ethics, which had been referred to this meeting at an earlier period in the year, remarked that in order to bring the subject properly before the meeting, it would be necessary for some one to present a resolution in reference to the attitude of the Society towards the Code. The original resolution of reference was not exactly clear. According to that resolution the question this evening would be upon the adoption or rejection of the Code ; but it is not competent for the Society to accept or reject the Code as a part of the Code of this Society, by virtue of the fact that it has already been adopted by the Medical Society of the State of New York. This Society can define its position in reference to this matter.

Dr. E. R. SQUIBB was very sorry to see that the subject was not announced on the card for this meeting. In all fairness, he thought every physician should have a chance to vote on this subject, if he feels so disposed. This resolution upon which the subject was to be brought up is now several months old; and although it had been announced in the Journal that it would come up to-night, yet that is apt to escape the notice of members. He thought the Society could not be too particular upon a subject of such vital importance as the position which the Society assumes or desires to occupy. And every member has a right to vote on the subject at a time when it is to come up. He proposed, therefore, to offer a preamble and resolution to bring the subject before the Society, then to move that this preamble and resolution may either be discussed now, or, better, that they be published in the Journal, so that every member of the Society shall be able to see them and appoint a time to vote intelligently, either in November or at another date. They can then be read, pondered over, and if necessary, discussed.

The resolutions are as follows:

Whereas, It is known through the delegates of this, The Medical Society of the County of Kings, to the Medical Society of the State of New York, that the latter body did, at the annual meeting in February last, first discuss the abrogation of the entire

Code of Ethics, and, that proposition having failed, did adopt the report of its Committee on the Code of Ethics, whereby that part of the Code which relates to consultations was not only practically abrogated, but a clause was substituted declaring that "members of The Medical Society of the State of New York, and of the medical societies in affiliation therewith, may meet in consultation legally qualified practitioners of medicine," which is in direct opposition to the former Code and to the Code of the American Medical Association; and

Whereas, This Medical Society of the County of Kings is in affiliation with, and is represented in both the Medical Society of the State of New York and the American Medical Association, it now finds itself with two Codes of Ethics which are in direct opposition upon the important subject of consultations, and with a by-law enforcing the Codes of both these bodies. If this County Society obeys the legislation of the State Society, it must give up its affiliation with the National Association; while if it holds to the Code of the National Association, it must lose its right of representation in the State Society by this rejection of its by-law; therefore, be it

Resolved, That this Society earnestly desires to retain its relations with both the State Society and the National Association, and, if possible, will do nothing to sacrifice its right to representation in either body.

Resolved, That this Society deprecates the principle of the State Society taking revolutionary action upon matters of general and important professional interest without consulting the wishes of its constituent county medical societies directly upon the points to be legislated upon.

Resolved, That this Society regrets the action of the State Society in regard to this clause in the Code of Ethics, and respectfully asks that the action may be reconsidered and reversed at the next annual meeting.

Resolved, That this Society is in favor of having a Code of Ethics, and of having one that may be in substantial accord with the principles of the old code of the State Society and the present code of The American Medical Association.

Resolved, That a copy of this preamble and resolutions be forwarded by the delegations of this Society both to the State Medical Society and the American Medical Association, and that the said delegates be instructed to vote on this subject in the interest of these resolutions, upon whatever issue may arise concerning Codes of Ethics or their abrogation, because these resolutions express the will of a majority in the Society to be represented by said delegates.

DR. SQUIBB continued : The object of these resolutions, Mr. President, is as clearly expressed in themselves as I can make them. They require no explanation—I think they speak for themselves. I think those who read them will understand them better and more thoroughly than merely hearing them read. I therefore move that if there be no disposition to discuss them at present, they be accepted, recorded, and published in THE PROCEEDINGS, and that the matter be called up for vote at the November meeting, notice to that effect being given on the card. I rather insist upon that because I think that is absolutely necessary in all fairness to the members of the Society. This motion was seconded.

The CHAIR acknowledged the omission, but thought it would rather be to the advantage of the Society in the end, because the resolutions of Dr. Squibb will have been published by the next meeting, and, in the second place, the action of this Society will have an influence in the State at large.

The motion of Dr. Squibb that these resolutions be accepted, recorded, and published in THE PROCEEDINGS, that the matter be called up for vote at the November meeting, and that proper announcement be given in the call for said meeting, was unanimously carried.

The CHAIR announced the death of Drs. A. L. Lowell and F. Goodwin.

On motion, the Chair was authorized to appoint the usual obituary committee in each case. Subsequently, the following committees were appointed: in the case of the former, Drs. Segur and Rushmore; in the case of the latter, Drs. Carolan and Quinn.

The report of the Committee on the death of Dr. Carpenter was presented—accepted as having been read.

The CHAIR declared the following to be duly elected members of this Society: Dr. Frank H. Ross and Dr. Agnes Sparks.

On motion, adjourned.

R. M. WYCKOFF, *Secretary*.

Ἀσκληπιὸς



ὁ Σωτήρ

Χάρμα μέγ' ἀνθρωποῖσι, κακῶν θελκτῆρ' ὀδυναῶν.

Hymns of Homer, No. XVI.

PROLIFERATIONS.

—DR. E. W. CARPENTER—a native of Massachusetts—received his medical education in the schools and hospitals of Boston, and commenced practice in Chatham, on Cape Cod.

There, for thirty years, he was the medical adviser and trusted friend of a large circle of patrons, and by his skill, sympathy and generosity, won the confidence and abiding friendship of all.

Ill health and the loss of a child led him to abandon practice, and sixteen years ago he made our city his home. During that time he was a sufferer from a complication of physical ailments, which were borne to the last with great fortitude. His death occurred in August, 1881.

His retiring disposition and the precarious condition of his health prevented his taking any active part in medical matters—though he was for many years a member of this Society and occasionally present at the meetings.

In a smaller circle of his professional friends he was greatly respected and honored.

J. T. CONKLING, M.D.,	} <i>Committee.</i>
F. H. COLTON, M.D.,	
J. H. H. BURGE, M.D.,	

—FRANCIS GOODWIN, M.C.P.S.L., died at 850 Bedford Avenue, aged 53 years. He was a native of Ireland and a denizen of this city since 1853. He was a licentiate of the Royal College, and a scholarly gentleman. Pulmonary phthisis terminated his life October 15.

—ABRAM LELAND LOWELL, M.D., died October 12, aged 50 years, after a very short illness from congestive chill, with pneumonia. He was born in Chester, Vermont, in which State several generations of his family have adorned the profession of medicine. He settled in Brooklyn

in 1872, and soon after was chosen Attending Surgeon to St. Peter's Hospital, a position held by him up to the time of his demise. He was a graduate from Harvard, and the Medical Department of the New York University.

—“THE SPINAL NERVES,” by A. H. P. Leuf, M.D. Works from the press under the authorship of members of this Society have atoned for their infrequency by their excellence, and “THE SPINAL NERVES” is no exception to the rule. This volume, with its accompanying diagrams, so exactly fulfills the outline of its preliminary circular, that we copy it entire as the best description of Dr. Leuf's work.

In this small work of less than sixty pages is given a condensed but detailed description of the anatomy of all the spinal nerves. It is accompanied by a diagram of the spinal nerves (36x18 inches) representing every muscular filament and other smaller branches worth remembering. Six anatomographical charts of the spinal nerves also accompany the text. The text treats of the nerves in the order in which they appear upon the charts, so that the latter may serve as an index for the former. The classification is complete, and based upon the most improved nomenclature. The most proximal branches and nerve trunks are printed in the largest and heaviest type, while the reverse is true of those which are most distal. In most instances the names of the nerves in the text are printed in type similar to that on the charts. The object of this work is to facilitate the study and easy remembrance of the spinal nerves. It has been designed for the practitioner as well as the student, and it is of special advantage to the latter in the dissecting-room. The text is bound in a stiff paper cover. The typography is of the best kind. All the lines are well separated and the type is large. The text is printed on heavy paper. The charts and the diagram are printed on smooth, stiff, heavy paper. Price, text, charts and diagram together, One Dollar (\$1.00), net. Wholesale and Retail Orders received by the publisher, F. B. O'Connor, Jr., 68 and 70 Court Street, Brooklyn, N. Y.

—TREATMENT OF PNEUMONIA BY THE INHALATION OF ETHER.—Dr. Samuel W. Francis, Newport, R. I., reports the successful treatment of an acute case of pneumonia by the inhalation of sulphuric ether. He says that “if seen early, during the first stage, by inhaling ether for thirty minutes, every six hours, many severe and protracted cases of sickness would be arrested.” Dr. Francis recommended inhalation of sulphuric ether for bronchitis in 1868.

—TREATMENT OF BURNS.—Castor oil, with just enough water of ammonia to saponify the oil, “takes the fire out very quickly.” To heal the sore, “there is nothing so effective” as Mayor's Ointment and the tincture of calendula (garden marigold), equal parts, well incorporated with a spatula.

• Another practitioner uses the frequent and continued application of white lead and flaxseed oil rubbed to the consistency of cream.

—THE REGULAR MONTHLY MEETINGS of the Medical Society of the County of Kings are held at 8 P. M. on the third Tuesday of each month, at Everett Hall, 398 Fulton Street.

The November meeting will be held on the 21st. The Report of the Therapeutic Committee will be presented.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

OFFICERS AND COMMITTEES FOR 1882.

<i>President</i>	C. JEWETT, M.D., 307 Gates Ave.
<i>Vice-President</i>	G. G. HOPKINS, M.D., 375 Grand Ave.
<i>Secretary</i>	R. M. WYCKOFF, M.D., 532 Clinton Ave.
<i>Assistant-Secretary</i>	W. G. RUSSELL, M.D., 165 So. 9th St., E. D.
<i>Treasurer</i>	J. R. VANDERVEER, M.D., 301 Carlton Ave.
<i>Librarian</i>	T. R. FRENCH, M.D., 469 Clinton Ave.

CENSORS.

B. A. Segur, M.D., 281 Henry St.	B. F. Westbrook, M.D., 174 Clinton St.
A. Hutchins, M.D., 796 De Kalb Ave.	A. R. Paine, M.D., 485 Clinton Ave.
J. D. Rushmore, M.D., 129 Montague St.	

DELEGATES TO THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

(1878 to 1882.)

Drs. J. C. Shaw,
C. Jewett,
T. R. French,

Drs. G. G. Hopkins,
J. A. McCorkle,
A. Sherwell,
J. H. Hunt.

Drs. J. Byrne,
B. F. Westbrook,
G. W. Baker,

Chap. XI., Art. 2, of By-laws: "Any Member elected as Delegate to the Medical Society of the State of New York, who shall be unable to act as Delegate during two successive years, shall be considered to have vacated his position as Delegate."

COMMITTEES OF THE SOCIETY.

HYGIENE.

Drs. B. F. Westbrook,

N. B. Sizer,

D. E. Chace.

THERAPEUTICS AND CLINICAL MEDICINE.

Drs. J. A. McCorkle,

A. Hutchins,

E. H. Bartley,

A. R. Paine,

A. R. Matheson.

OBSTETRICS.

Drs. J. R. Vanderveer,

A. S. Clarke,

E. Palmer,

W. Wallace,

B. A. Segur.

SURGERY.

Drs. A. J. C. Skene,

J. S. Wight,

G. R. Fowler,

J. D. Rushmore,

P. L. Schenck.

REGISTRATION.

Drs. J. A. Jenkins,
A. S. Clarke,

Drs. W. G. Russell,
Z. T. Emery,

Drs. F. W. Rockwell,
A. Haslett.

PHYSICIANS' MUTUAL AID ASSOCIATION.

Drs. W. W. Reese,
N. W. Leighton,

B. A. Segur,
A. L. Bartlett,

A. Hutchins,
S. H. Olmstead,

J. A. Jenkins,
A. W. Catlin.

R. M. Buell,

PROCEEDINGS
OF THE
MEDICAL SOCIETY OF THE COUNTY OF KINGS.

VOL. VII.

DECEMBER, 1882.

No. 10.

REPORT OF COMMITTEE ON THERAPEUTICS AND
CLINICAL MEDICINE.

THE PHYSIOLOGICAL ACTION AND SPECIAL THERAPY OF STRYCHNIA.

BY J. A. McCORKLE, M.D.

The dose, the varied action of the same remedy in *different* doses, and the effect of remedial agents upon organic irritability, are more and more engaging the attention of the profession. In studying the action of any remedy the size of the dose, frequency, and length of time administered, are all essentials in arriving at correct conclusions. This is especially true of special stimulants. If given in too large doses, their peculiar physiological effects will be speedily produced; if in medium doses, long continued, the first stimulant effect will be followed by exhaustion from *over-stimulation*; if in small doses, the stimulated action may be long continued without any apparent exhaustion; but as the organism approaches the health standard, a special stimulant of any kind should be discontinued.

Prof. Armor, in his Clinical and Didactic Lectures, has long taught the general proposition, that "all special stimulants, if given too long or in too large doses, sooner or later become depressants;" *i. e.*, a stimulant becomes an irritant and causes an afflux of blood to a part, greater than the functional activity of the part. Irritative action produces morbid hy-

peræmia; the vascular supply, instead of supplying a (physiological) want, imposes a (pathological) burden. Prof. Bartholow has admirably expressed the same views in a recent article published in the *Philadelphia Medical News*. He says "the irritability—that is, the power to react to impressions—of a tissue may be increased, or diminished, or destroyed by medicines affecting function. Those medicines which increase irritability must, if their effects continue, ultimately cause the same result as those lessening irritability from the beginning of their action."

Every organ, every cell in the living body possesses a certain irritability, and in a state of health is acted upon by the physiological stimulus of nutrition. In children, this tissue property is well marked, as shown by the general activity of primary and secondary assimilation.

Every organ is sensitive to the normal stimulus and acting in harmony with every other organ; growth and activity constitute the characteristics of youth and early manhood. If, at this period of life, any organ becomes diseased, it reflects its morbid influence markedly upon other organs of kindred function, and more or less upon every part of the body. As age advances, tissue irritability grows less and less; the stomach needs a condiment, a glass of wine, or something stronger, to spur its flagging powers; the bowels need a cathartic, and if an organ becomes diseased, it suffers separately, the neighboring organs taking little or no cognizance of the lesion; hence, in old persons, latent diseases are not uncommon. The irritability of the economy, as a whole, is so far exhausted, that the usual symptoms are not manifested. This physiological irritability, so sensitive in childhood, so obtunded in advanced life, is an important element in the management of every disease; at one time exalted, at another depressed, these varying conditions of organic irritability must be the guide to our therapeutics. There is a well-known therapeutic law, that over-stimulation is followed by depression.

If by the action of a medicine the function of a part is carried *above* the normal, it will be followed by a corresponding depression *below* the normal; hence over-stimulation is followed by interference of function, either modified, deranged or destroyed. If a function is below the health standard, a special stimulant may be given to bring it up to, or nearly up to par. Under such circumstances little or no depression occurs, for the inherent tendency of the organism is to return to a state of health, and nature may take advantage of the gain accomplished by the stimulant and re-establish normal function.

In prescribing under such conditions, the danger is that we not only carry the function up to, but beyond the normal, thus exhausting the irritability of the part, to be followed by more or less depression.

Care should be exercised to avoid the employment of remedies beyond

their period of usefulness. We are apt to be carried away with the happy action of certain remedies and allow them to be taken for a long period; but their continued use is almost sure to disappoint both patient and physician, for administered beyond their stimulant action, they exhaust irritability and functional interference results. No remedy whose action is on special function should be continued beyond the limit where the reparative power of the system will be able to complete the cure. The popular idea that the strength of an individual, who is in comparative health, may be kept up by the use of tonics, or perhaps stimulants, is erroneous and fraught with danger. The prolonged use of even the simple remedies may produce ill effects in more ways than one. The continued use of iron in the anæmia of phthisis may first increase, then depress the action of the stomach and associate organs of digestion; or, if its specific action obtains, it may impose a burden upon the crippled lung; the enriched blood must be oxidized, and this necessitates additional work for the diseased organ. Rest to the inflamed part is as essential in medicine as in surgery. Thus in the treatment of disease, not only the dose, but the limitation as to time, becomes an important factor, and should never be lost sight of.

The dose, if to be long continued, should be within physiological stimulation—never to the extent of over-stimulation or depression. This general therapeutic law is well illustrated by the action of *nuxvomica* or its alkaloid. Strychnia is a direct stimulant to the spinal cord, and as such the force of its power falls upon special function. In small doses the cord is stimulated within physiological limits, and function is thereby increased. It has a well marked local effect upon the respiratory centre in the medulla oblongata, and a knowledge of its physiological action has led to excellent therapeutic results. J. Milner Fothergill, upon the observation of Rokitanski and others, called the attention of the profession to the action of this drug as a stimulating expectorant. Whenever, in the course of an acute disease, the lungs begin to fail and there is a tendency to death by apnoea, we have no respiratory stimulant equal to strychnia in combination with phosphoric acid. In this and similar cases the danger is imminent and the dose must be adequate to meet the emergency, but only for a sufficient period to give margin of time to effect a cure. The function of the respiratory centre is to guard the processes of oxidation. Strychnia in small doses acts as a stimulant and increases oxidation, as manifested in disease, by less labored breathing and diminished venosity; but if the centre is over-stimulated, depression follows, function is interfered with and diminished oxidation results.

This functional interference gives rise to imperfect oxidation of waste

nitrogen material, as manifested by deposits of urates in the urine; and also to imperfect burning of the hydrocarbons, as observed in the transient diabetes found after prolonged use of strychnia in considerable doses. Prof. Armor some time ago called my attention to the clinical fact that the long use of nux vomica in full doses was liable to cause transient diabetes. From a knowledge of its physiological action this is to be expected. At first it stimulates the respiratory centre, thereby increasing the process of oxidation; afterwards, by over-oxidation, it wears out the irritability of the part, and imperfect function results, as manifested by imperfect oxidation of the hydrocarbons or sugar. In diabetes the temperature, as a rule, is below normal.

One source of animal heat is compromised, the unused sugar is so much loss, and the organism suffers in consequence. Diabetic patients feel keenly the changes of weather and often complain of cold. If the heat-producing function in the animal body be diminished, the indication is to stimulate the respiratory centre, the special action of which is to supply oxygen.

Reasoning from the known physiological action of strychnia to its therapy, it would seem to be indicated in the treatment of diabetes, not on the principle of *similia similibus curantur*, but on the common sense principle of removing the cause.

If the cause be due to imperfect oxidation of the hydrocarbons, the indication is to stimulate the respiratory centre by a special stimulant, of which strychnia is the type, not in large, but in small doses, just sufficient to gently stimulate, but not depress the function of oxidation. If the dose be too large or too frequently repeated it will exhaust physiological irritability, intensify morbid action, and increase the diabetic tendency. "No remedy of any potency occupies neutral ground." It will either antagonize disease, coincide with it, or produce it.—BODNER.

This is markedly true of strychnia in the treatment of diabetes. When indicated in the treatment of senile diabetes or any disease of old persons, especially old men, care must be observed in its use. Long before the ordinary dose will act upon the sluggish irritability of the upper cord, its special stimulant action will be felt by the over-sensitive bladder, and render this viscus extremely intolerant of its contents—a source of great suffering to elderly persons. Strychnia has long been used in the treatment of diabetes, but of late has fallen somewhat into disuse, not from want of curative power, but from want of knowledge as to its administration. The etiology of diabetes is not well understood. Under the circumstances we must be content to meet the empirical facts of clinical medicine, as far as possible, with rational therapeutics. Strychnia is a remedy powerful for good or ill in this as in many other diseases, ac-

cording to the mode of its administration. Its many virtues have led to its abuse.

One of the evils of the drug trade is that certain manufacturers are flooding the country with medicinal combinations of great potency, such as "Iron, Wine and Strychnia," "Quinine, Iron and Strychnia," "Calasaya Bark, Iron and Strychnia;" and they impose on the credulity of the public by such seductive titles as "Nerve Tonic," "Stimulant Tonic," "Stomachic Tonic," etc.

When a stimulant, such as alcohol, is taken in health, it gives a feeling of increased strength, of well-being; but it is always followed by depression.

What is true of alcohol is likewise true of every special stimulant, including strychnia. The first effect of the combinations mentioned is to stimulate, hence the plausible appeal to the senses; but depression, sooner or later, is certain to follow, and with it evil consequences. The question very naturally arises, may not some of the cases of transient diabetes observed in practice owe their origin to the long use of some combination containing strychnia? Its physiological effects are speedily manifested, and are most marked. It is rapid in action, and rapidly exhausts irritability, and when used should be by the advice of an intelligent physician, and be discontinued at the earliest moment compatible with safety to the patient.

If the dose is to be long continued, it must be relatively small; if to meet an emergency, the amount may be limited only by its physiological effects.

As practitioners, then, we must recognize the relative power of drugs, and be ever mindful of the element of time. We must know their varied action in different doses, and appreciate their relations to organic irritability, in order to use them safely, successfully, and well.

ANTISEPTIC THERAPEUTICS, OR THE ANTISEPTIC TREATMENT OF ZYMOTIC DISEASES.

BY E. H. BARTLEY, M.D.

From the beginning of the science of medicine, our profession has at times been dominated and influenced by theories and fashions, which have, for the time, directed the whole course of research and clinical treatment into channels in accord with their teachings. The theory which at the present day seems to have taken possession of the field, is that of the bacillus origin of the essential fevers, and zymotic diseases of all kinds. This new dominant idea concerning the origin of these diseases seems to have a more rational basis than any that have preceded it, and it threatens to include in its grasp many diseases which have usually been regarded as entirely non-contagious. Beginning with the experiments of Jenner, this idea has grown and expanded, until there is now a bacillus described for nearly every disease of the above class.

From Italy comes the *bacillus malarie*, of Crudelli; from Germany the *bacillus typosus*, of Klebs; from France the *bacillus anthracis*, of Pasteur; from America the *bacillus diphtherie*, of Wood & Formad; and lastly, from Berlin we hear of the *bacillus tuberculosis* of Koch. From the science of veterinary medicine we are now receiving our most valuable aid in the investigation of the nature of contagion. In this country, as well as abroad, great advances are being made by that profession in this direction. We must regret that an active board is supported by Congress for the purposes of research in the diseases of farm animals, while the National Board of Health is allowed to famish. But the real, vital question has not yet been met; and it is in this direction that the future research must be pushed. What we are most interested in is to find a remedy which shall be able to destroy or devitalize these bacilli, and avert the mischief which they can do to us and to our patients. We want some one to follow the footsteps of the Klebs and the Kochs, and experiment until he can give us a remedy which shall kill each of these organisms. But there are serious hindrances in the way of such experiment.

Few sick persons are desirous, to say the least, of being experimented upon if they know it; and again, owing to modifying circumstances, a given result does not always proceed from what *appears* to be a given cause or remedy. Epidemics vary in their malignancy, and many of the afflicted necessarily recover of themselves. The basis of the germ theory of disease is now well enough established, we think, to make a rational

system of therapeutics both possible and necessary. In preventive measures directed against these morbid agents, we must remember that all are not destroyed with the same ease, or the same agent. Indeed, these little organisms are sometimes quite tenacious of life. According to the experiments of Salmon* upon the cultivated virus of swine plague, or hog cholera, "it requires, to prevent the multiplication of this virus, a 2 per cent. solution of carbolic acid, 2 per cent. of borax, 1 per cent. of benzoic acid, $\frac{1}{3}$ per cent. of sulphate of quinia or iodine, $\frac{1}{3}$ per cent. of salicylic acid, and $\frac{1}{10}$ per cent. of chloride of zinc." But it required a considerable more of these agents than the above, to kill the micrococci. "It was found to resist 140° F. for fifteen minutes, but was destroyed by 150° F. for the same length of time." There are other forms of micrococci which are able to stand a higher temperature than this, while Prof. Koch finds that the limits of temperature for the tubercular germ are from 86° to 104° F.

Another point worthy of note in this connection is, that it has been recently stated that some of these germs of disease are much more virulent when the supply of fresh air is not abundant; even bacilli, which would be innocuous in open barracks, may become quite virulent in closed apartments. Clinical observation would seem to confirm this view.

The experiments of Dr. James Law† enable him to state with great positiveness that the virus of swine plague, when cultivated in a limited supply of air, is very much more fatal and virulent than the same grown with a free supply of air, and the virulence is decreased in proportion to the freedom of the supply of oxygen or air. Pasteur holds the same view. Law also found that the virus varied greatly in virulence, according to the character of the organic solution in which the cultivations took place. Applying this fact to the behavior of contagious diseases in men, it may, perhaps, give us a partial explanation of susceptibility of individuals. Clinically we know that persons are susceptible at one time to certain diseases, and not at another. One person is more susceptible than another. In order to reach these agents, after they have actually entered the system, is the main question for us to discuss. How to do this is a difficult problem. The greatest difficulty is in introducing into the circulation the antiseptic agent, in sufficient quantities to be effective, without injury to the normal physiological processes. Many of the antiseptics in use are so soon destroyed, by oxidation in the blood, that they are not available. Of the inorganic agents which have antiseptic

* Contagious Diseases of Domestic Animals. Dept. Agr., 1880-81.

† Contagious Diseases in Domes. Animals. Agr. Dept., Washington, 1880-81.

properties outside of the body, as oxygen, chlorine, iodine, bromine, sulphur, and their compounds, few are available for internal administration. The first of these is of a great deal of benefit in nearly all cases, in conjunction with other remedies. Attention has been already called to the possible action of a free supply of fresh air in infectious diseases. It is well understood that confined air is especially favorable to the production of septicæmia, diphtheria, tuberculosis, and probably other diseases of this class. This appears to be especially true of the last-named affection, not only in man, but in some of the lower animals. In the prairie regions of the West, where cows are seldom, if ever, stabled, tuberculosis among them is rare; while in stabled cows, in the vicinity of our eastern cities, it is very prevalent. We have all seen well marked cases of tuberculosis very much benefited, if not entirely cured, by a life in the open air. This is more especially seen in the beneficial effects of high altitudes, both in prophylaxis and therapeutics. As an explanation of this fact, M. Paul Bert recently stated before the International Congress of Hygiene, at Geneva, that he had found that the blood of animals reared in low countries absorbs from 10 to 12 per cent. of its weight of oxygen, while that of animals acclimatized to an elevation of 12,000 feet above sea level absorbs from 18 to 20 per cent. of its weight.

The oxygen treatment for phthisis has received not a little praise from some authors, and a recent writer* treats yellow fever with baths and enemata of potass. permanganate, with the idea of supplying oxygen in this way. Of the value of out-door air in the treatment of yellow fever, tuberculosis, all forms of septic fever and dysenteric troubles, there need be nothing said.

Wherever yellow fever has been treated in open barracks, it has been found comparatively easy to control; and the same may be said of septicæmia and erysipelas. In the management of puerperal septicæmia, no remedy is more important than plenty of pure air. No one doubts the efficacy of out-door air in the diarrheal troubles of childhood.† Chlorine, bromine and iodine have marked antiseptic properties, destroying the germs of lower forms of life, when concentrated. Their activity is in the order named. They act principally by virtue of their affinity for hydrogen; and a great variety of organic bodies, when moistened and treated with these agents, are destroyed by the oxygen set free in taking the hydrogen from the water present. They are therefore oxidizing agents when used in a free state, and by their action are converted into the corresponding acids (hydrochloric, hydrobromic and hydroiodic).

* Rasander, in *Jr. de Med. de Paris*.

† See Routh, *Infant Feeding*, p. 20.

When this change has taken place, their antiseptic power is at an end. When administered internally, the most active one disappears first, and probably in the upper portion of the alimentary canal, and therefore can only act as an antiseptic agent in the stomach, and possibly the duodenum. Iodine being the slowest in its action, may pass some distance down the alimentary track, and at times produce an action upon the lower bowel causing purging. Without doubt, a portion of the drug is absorbed before it enters into combination, and circulates as such in the blood. Prof. See* asserts that iodine exists in the blood only as alkaline iodides; while Dr. Kämmerer† affirms that iodide of potassium is decomposed by the ozone, and depends for its action upon the liberated iodine. Dr. H. C. Wood quotes a case of Dr. E. Rose, in which, soon after the injection of a large quantity of iodine into an ovarian cyst, a portion of it was vomited from the stomach. I have myself obtained the reaction for free iodine in the saliva of a patient who was taking large doses of potass. iodide. Buchheim states that iodine is liberated in the free state from the bronchial, faucial and nasal mucous membranes; and Dr. R. W. Taylor‡ thinks he has seen the free escape of iodine by the skin.

It is probable, therefore, that this agent may be introduced into the blood as well as in the larger portion of the alimentary track; and that it may there have some antiseptic action in addition to its other well-known effects. Chlorine and bromine, although more active as antiseptics and disinfectants, are, by reason of their readiness to enter into combination, unfit for internal administration to this end. They are, also, rather too irritating to be available for inhalations in the treatment of purulent bronchitis and phthisis; while iodine has proved itself a valuable agent in this form of medication, and in local applications to diseased mucous membranes generally. In diphtheria, however, chlorine and bromine in aqueous solution have their ardent advocates as local applications, as well as iodine. In the treatment of typhoid fever iodine has risen to considerable prominence. It is recommended by Drs. N. S. Davis§ and Bartholow|| among others. The iodides are lauded by many writers. Dr. C. G. Bryan¶ regards this remedy as having the power either to arrest or shorten the course of the disease. Dr. Oatman**

* London Med. Record, Vol. 1, 777.

† Virchow's Archiv. Bd. 59, p. 467 and Bd. 60, p. 527.

‡ Am. Jour. of Syphilography and Dermatol., April, 1873.

§ Louv. Med. News, Apr. 29, 1882.

|| Can. Med. and Surg. Jour., 1880.

¶ North Carolina Med. Jour., 1880.

** Pacific Med. and Surg. Jour., 1882.

says that it "is as much a specific in typhoid as quinia is in intermittent fever." He gives gr. V every three hours in sweetened water.

The use of iodine in diphtheria has received the highest praise from Dr. Gauthier,* of St. Paul. He paints the patches with tincture, and gives to an adult 8 to 10 drops of the same every hour, until the fever disappears, which is usually from twelve to twenty-four hours. He asserts that it gives better results than quinia does with ague. He has also treated successfully 150 men, and about the same number of animals, for rattlesnake bite, with the same remedy, used both locally and internally.

Drs. Watson† and J. P. Walker have reported very favorably on the use of iodides in scarlatina. The former thinks it prevents the spread of the disease. In the treatment of malaria, more especially of the chronic forms, this remedy has a recognized reputation.

Drs. Kleinecke‡ and Hinchey have reported over 300 cases of malarial affections treated with a solution of iodine in iodide of potassium and simple syrup, with but one case reported as not permanently relieved. "Not more than one per cent. of the cases were not relieved." Quinæ would not give a much better record. The chlorides of zinc and mercury are powerful antiseptic agents, but cannot be administered in sufficient quantities to be available for this purpose, on account of their destructive action upon the albuminous matters of the tissues. Of the antiseptic value of sulphites and hyposulphites outside of the body, nothing need be said. The value of sulphur is due to its slow oxidation, producing sulphurous acid, which is the active agent. When sulphur and the sulphites are given internally they are rapidly oxidized to sulphates; sulphur dissolves in the alkaline bile and is absorbed as such, but undergoes oxidation in the blood, and appears in the urine as sulphates. In the alimentary canal the sulphites and hyposulphites may be employed to check the growth of ferments in the stomach, or even below this organ. As an example of the good results which may sometimes be obtained with sulphurous acid, we may cite the case of obstinate dysentery accompanied by green vomit, reported by Dr. McCorkle in the PROCEEDINGS of this Society for February, 1882. The sulphites have been tried in all the zymotic diseases, and with apparent benefit in some.

In typhoid, Dr. J. B. Yeo§ says sulphurous acid exercises no influence on the disease, but is of some value as an antipyretic. In diphtheria Dr.

* Chicago Med. Review, Sept. 20th, 1881.

† Quart. Epitome of Am. Med. and Surg., Part IV., p. 467.

‡ St. Louis Clin. Record, June, 1882.

§ Chicago Med. Review, July 1, 1882.

Yeomans* gives gtts x-xx of a mixture of equal parts of sulphurous acid and glycerine every hour, as he thinks, with good results. Sodæ hypsulphite and quinæ are used by Dr. Edwin Burd with flattering results. But in scarlatina sulphurous acid, sulphur, sulpho-carbolate of soda, and soda bisulphide have all found ardent advocates. Dr. Shiffeld (Chicago Med. Review, April 5, 1881) claims that the last remedy given in seven grain doses every hour, until an effect is produced upon the disease, has a marked effect in cutting short both diphtheria and scarlatina. Dr. Ross, of Richmond, Va., says that sulpho-carbolate of soda will prevent scarlet fever in those who have been exposed to it, while the same claim has been made for sulphur given from the time of exposure. The sulphurous treatment for scarlatina, indeed, seems to have found a great many advocates in the last few years. It is a well-known fact that workmen in sulphur mines in Sicily are protected from malaria, so that but a few are attacked, while in the neighboring villages at least ninety per cent. suffer from the disease. Some of the elephant hunters of Africa protect themselves from the marsh fevers of that country almost entirely by daily fumigating the naked body with sulphur.

Boric acid and borax are known to have an antiseptic action, but they do not seem to have been much used internally for this purpose. A new antiseptic, known as boroglyceride, made by boiling boric acid in glycerine, seems to have some value as an anti-fermentative. In a few cases of fermentative and irritative diarrhœa in children which I have treated with this remedy during the past summer, it seemed competent to check acid fermentation in the bowels, although I have not had enough experience with it as yet to speak with much positiveness. I have used it especially in those cases where there is an excessive production of acids by fermentation of the saccharine elements of food, with green irritating acid stools.

As a rule, organic bodies are rapidly destroyed, in the economy, by oxidation.

We have, however, a notable exception to this rule in the number of organic bodies belonging to the benzole series of compounds; and, fortunately, it is among these compounds that we find our most valuable organic antiseptic agents. To this class belong phenol or carbolic acid, cresylic acid, benzoic, salicylic, and picric acids, thymol, salicin, menthol, eucalyptol, terebene, turpentine, etc., all of which have been used in modern antiseptic medicine and surgery, and all of which resist the oxidation process in a more or less marked degree, both in the laboratory and in the blood. As a rule, the more complex the chemical constitu-

* Canada Lancet, Dec. 1, 1881.

tion of the body, the more easily it is oxidized or destroyed in the body. Thus phenol, cresol and picric acid seem to be excreted by the kidneys without undergoing much alteration, while benzoic and salicylic acids are but slightly altered, and that apparently in the kidney itself—benzoic being converted into hippuric and salicylic into salicyluric acid. The latter, however, is partly excreted in the unchanged state.

Salicylic acid, as well as benzoic acid, circulates in the blood in combination, as sodium salts. The sodium salt of salicylic acid has very much feebler antiseptic properties, according to some observers, but according to others the same as the acid. In benzoates we have all the antiseptic activity claimed for the acid. Salicin seems to be pretty rapidly decomposed in the blood, and according to Senator, the activity of the agent depends upon its conversion into salicylic acid. The change is not complete, however, for, after large doses, some salicin as well as salicylic acid and saligenin are to be found in the urine.

Of menthol and eucalyptol little seems to be known of their action and changes in the blood; carbolic acid probably enters the blood as a carbolate of sodium, and is rapidly eliminated, principally by the kidneys; a part of it, however, is oxidized, and appears apparently as oxalic acid.

It must be remembered that the carbolate of sodium is not a very active antiseptic, and hence we must not expect too much from the internal administration of the acid, and especially when we consider the dangers attending the exhibition of any considerable doses. In the alimentary canal it has been used to check excessive fermentation in flatulent dyspepsia and the growth of *sarcinæ*.

It has been used considerably in typhoid fever by Desplats, Dèclat, Van Oye, Ramonet and others. The verdict seems to be that it exercises an anti-pyretic and curative anti-zymotic action. This remedy is quite readily absorbed by the skin and may be applied in the form of baths. Ramonet* says sixty grains of the acid may be used per diem, in the form of a wash applied to the skin; but larger doses are liable to do harm, especially in the convalescing state. He claims the best results in typhoid by this treatment, but always supplements it by tonics. It is a standard remedy for typhoid fever at the Pennsylvania Hospital, Philadelphia. In diphtheria, carbolic acid has been used as a local remedy for years by a great many physicians, and with decided success. Peraté† has reported good success with the local application of carbolized camphor. The internal administration of phenol in whooping-cough has been

* Chicago Med. Rev., June 15, '82.

† Med. and Surg. Reporter, Sept. 11, 1880.

highly recommended by some,* as well as inhalations of the same agent. Whether the benefit derived from this remedy, as well as cresylic acid and other tar products, in whooping-cough, is an antiseptic action, is open to considerable doubt.

Carbolic acid has been used to some extent in scarlatina, but, judging from the literature of the subject, does not seem to have been tried as freely as in some of the other zymotic diseases before mentioned. There is a tendency in carbolic acid to seriously affect the kidneys in passing through them, which should make us somewhat cautious in its administration in this disease. Dr. Macdonald, writing in the *Dublin Medical Journal*, describes his experience with the remedy in six cases as quite successful in every respect, when given in from one-fourth to one minim doses in glycerine every four hours. The sulpho-carbolate, as a prophylactic in this disease, has been mentioned above.

As a remedy in yellow fever, it has been tried recently by injection into the veins by M. De Lacaille † of Rio, Brazil. He has written very enthusiastically upon the success of the trial in a dozen or more cases.

In speaking of the first case in which he used this treatment, he says : "During the thirty years in which I have been employed in fighting yellow fever, this is the first patient whom I am certain of having snatched from death at such a period of the disease." Good results have also been reported from the hypodermic injection of a solution of benzoate of sodium in yellow fever.

Inhalations of carbolic acid and thymol in phthisis and purulent bronchitis is too well known to occupy much space here. Thymol is being tried as a remedy to replace phenol both internally and locally. It is much less poisonous than phenol, and ten times more efficient. One part to one thousand checks alcoholic and greatly retards lactic fermentation and putrefactive decompositions. It is not, however, without considerable danger when given internally, and does not seem to give evidence of much superiority over phenol. Its agreeable taste and odor adapt it especially to inhalations in phthisis, fetid bronchitis, diphtheria and like affections. For these purposes the strength recommended is from 1 in 1,000 to 1 in 3,000. It has been thought to exercise a curative action when given internally in doses of three to five drops of a one per cent. solution upon vesical catarrh and certain cases of infantile diarrhea.

Salicylic acid and salicin have been used and recommended in almost every form of zymotic disease. They have the advantage of being less

* Edin. Med. Jr., 1881, p. 1094.

† N. Y. Med. Times, June, 1882; So. Med. Record, June, 1882.

poisonous than many other antiseptic agents, but I think the former, especially, has been somewhat disappointing. The reason for this is not very evident. The results of its use in typhoid fever are very contradictory. It is highly commended by some writers both as an antipyretic and as a curative remedy, some even claiming an abortive action, while others give it a prominent place in the first role, but say it is of no value in the second and third. Dr. H. C. Wood, after reviewing the statistics upon the subject, says: "My own feeling is that salicylic acid will be found to do more harm than good in such diseases as typhoid fever."

The results in diphtheria have been somewhat more encouraging, both locally and internally. In malaria, the results are again doubtful, and it is certainly inferior to quinia. In vesical catarrh with alkaline urine it seems to be a useful remedy. In scarlatina it does not seem to be a popular remedy, although a few have reported favorably upon its use. It has recently been tried as a prophylactic against yellow fever with success.*

As an antiseptic agent for internal administration, benzoic acid and its salts rank high in the scale. We have already referred to its use hypodermically in yellow fever. It has long been used to prevent the alkaline fermentation of the urine in cystitis. The power of benzoic acid to render the urine acid under these circumstances has led to the erroneous assertion that benzoic acid given internally renders alkaline urine more quickly and certainly acid than other acids, whatever be the cause of the alkalinity.

Dr. Weise,† of Berlin, recommends benzoate of soda in diphtheria, with the local application of salicylic acid or carbolic acid. But as far as we are able to judge from the literature, it has not been employed in the contagious fevers as freely as its properties would suggest. Ammonium benzoate has been highly recommended by Dr. Harris,‡ and benzoate of soda by others in dysentery. The antiseptic treatment of dysentery is often beneficial from the fact that dysentery often has a miasmatic element in it, and it is in such cases especially that benzoates, carbolic acid, salicylic acid and sulphites will be beneficial. Terebene has come into use recently as a remedy for inhalations in phthisis, and has been highly recommended for dysentery. Turpentine has found favor with some practitioners for the same purpose. These bodies, however, are not pure antiseptics, but also stimulants, and probably a major part of any good effect they may have is due to their stimulating effect upon the mucous membranes.

* Medical Record, April 29th, 1882.

† Berlin Klin. Wochenschrift, 1881, No. 4; British Med. Jr., May 7, 1881.

‡ India Med. Gazette, Aug. 1, 1881.

This leads us to speak of alcohol as a means of combating zymotic diseases.

There is hardly one in the whole category of this class of diseases that does not require alcohol in large quantities sooner or later. Alcohol counteracts not only the depression produced by the presence of the poison in the system, but it retards the production of that poison, and checks the excessive metamorphoses set up by it, and thus acts as an antipyretic. It is, at the same time, an antiseptic, antipyretic, and a stimulant. It should not, therefore, and probably never will, be excluded by the use of any other antiseptic agents from its place in the essential fevers; for, as has already been hinted, the most of the antiseptic agents in use have in themselves some depressing action upon the nutrition of the tissues as well as upon the germs foreign to the body.

Salicylic acid, for example, not only hinders the growth of the organized ferments, but the action as well of the unorganized organic ferments. In considerable quantities it prevents the action of ptyalin upon starch.

The incidental action of many of the above antiseptic agents stands in the way of our deriving that degree of benefit in their use which *à priori* reasoning would lead us to expect. If, therefore, we can combine the purely antiseptic remedies with alcohol or some other stimulating remedy which shall not interfere with their action as such, we may hope to apply this line of treatment with success.

It is manifestly impossible to introduce into the blood a sufficient quantity of any of these drugs to render it antiseptic; for this would require about one and three-fourths ounces to give a one per cent. solution of the antiseptic. All that could be expected is to get a certain amount of inhibitory action upon the growth of the hurtful organisms, and then stimulate the vital powers to overcome the effects of the growth of the poison.

I have said nothing of quinine and its congeners in this discussion, because their action and uses are supposed to be pretty well settled. They are universally admitted to be valuable antiseptic agents against certain miasmatic poisons, and possess at the same time a tonic effect instead of a depressing one upon the debilitated tissues.

It would not be prudent, in the present state of our knowledge of the action of antiseptic agents within the body, to attempt to defend the antiseptic theory in all cases where benefit is derived from their exhibition. Nor is this our aim in presenting this brief *resumé* of what is being done at the present day in this direction. It is our aim merely to call attention to the degree of success that has been met with in rational therapeutics in the treatment of zymotic diseases, based upon the light obtained from recent investigations upon their etiology and pathology.

NOTE ON THE PARTURIENT DOSE OF ERGOT.

BY ALEXANDER HUTCHINS, M.D.

Ergot is not a new remedy. Though its oxytoxic virtues have been known from a very remote period, it is now 75 years since Dr. Stearns, of Saratoga Co., gave it a place which it has maintained till quite recently. We are in the midst of a decade reactionary to its ancient use, and new in its later and more experimental and physiologic application. In point of fact, so profound is the reaction against the homage generations paid to it, that it threatens to be (if, indeed, to a large extent it has not already been) torn from its pedestal and shattered by its traducers. If the books and speech of our fathers are to be trusted, ergot, for many a decade, was one of the attendant divinities of Lucina, but now, if the common utterances of men are to be the guide, one hesitates in deciding whether the old goddess, in her special mission, were not less of deity than devil. So coinciding is one man's utterance with another's, that it requires some courage, with many an apology, with great hesitancy and carefulness of speech, to submit the possibility that the reaction may be overstrained. Especially so when the writer on Ergot in the 9th edition of the "Encyclopædia Britannica," that voluminous and latest *resumé* of the results of the most exhaustive and scholarly inquiry, asserts that "*Ergot should be excluded from the available means of inducing labor, and ought not to be administered even as late as two hours before the birth.*"

My own professional life (a trifle short of a quarter of a century old) began when ergot was respected, and not feared, in the lying-in room. To-day the cheek blanches and the heart-throbs flutter at the demoniac possibilities its presence may evoke. To trace out the story of this revulsion is a curious inquiry, and one not possible within the limits of strict narrative. That the more modern uterus has undergone a super-sensibility to the stimulus of ergot is hardly to be thought of. That the spurred rye of colonial days became endowed with new potency with the emancipation of the slave, is a little too mixed to be consistent with the order of nature. That our fathers' life was one atrocious blunder, passed in a perennial holocaust of ruptured uteri, and that, in generations before (when deep sutures and freshening of tissue for the torn perineum were unknown), our ancestral multipara had common exit for her fæces and her child, is too much to believe if one pays any respect to the fifth commandment. That our fathers had ways of managing ergot which they carried to the grave with them, and no one has taken the

trouble to resurrect the unrecorded facts, is a possible solution. That ergot is potent to arouse the sluggish uterus, yet so unmanageably potent that it is wise to avoid its use, is an unphilosophical conclusion, and one not in accord with the spirit of these times, when the best methods are being subjected to the crucial test.

At the outset of some suggestions looking to the restoration of ergot to its historic niche, I present my compliments to Dr. Gillette, of New York, who has lately, in a published paper wherein he advocates certain interferences in the first stage of labor, had the heroism to protest with great force, wisdom and clearness against Blundell's alliterative aphorism, that "meddlesome midwifery is bad." I take occasion, now and here, to assert, as a necessary preliminary to these suggestions, my profound conviction and unvarying rule of action, that the average parturient, from the incipient indications of on-coming labor, is to be watched, guided, helped. Under intelligent oversight, avoidable accidents may be prevented and the progress of labor facilitated. Anything short of this is a greater or less neglect.

I am compelled, likewise, in defense of this, to protest against page 400 of the *American Journal of Neurology and Psychiatry*, August, 1882, where the accomplished editor (and the fact of his accomplishment makes the bruise the sorer) alludes to me (not by name, of course, but only as the individual is included in the mass) as among "those who are learnedly at hand to welcome infants whom the uterine muscles are intelligently propelling into the world." I deny for my medical brethren and for myself that their time and anxiety, and skill and helpfulness—their avoidance of disaster and their heroism in emergency in this crowning passion in myriads of homes—are to be summed up in this passive intelligence. I take the liberty of suggesting that if this writer will leave, for awhile, his eighteen inches of spinal cord to which he alludes in the same paragraph, and will tackle the sympathetic ganglia, with their average incidents in the lying-in room in a score of cases, his obeisance at our feet will compel our plenary pardon for this unfortunate lapse of speech.

That ergot exercises a tonic action on the longitudinal unstriped muscular fibres of the uterus, causing compression of the organ, and thereby expulsion of its contents, at the parturient epoch, is the accepted fact of the major experience. That it has no place in the first stage of labor, and that a resisting, tense or undilated os, with an unusual presentation of the child, contra-indicate its use, are not debatable statements. That it may be potential in stimulating the flagging energies of the uterus in a protracted labor, and in arousing to activity an indolent uterus, when accompanied by a soft, thick-edged, moist and dilatable os, is a just

claim ; and it is here that the accoucheur can be credited with something more than passive intelligence.

In another place I have contended for a discrimination between the structure and processes necessary to the maintenance of the individual and those necessary to the continuance of the species, and argued for the low organization and uniformity of function of the strictly reproductive structures of the woman, as contrasted with the high organization and sensitive functions of her nutritive structures.

Though hesitating at running a muck with the pretensions of the gynecologists (whom a late number of a very dignified medical journal classed as the most gilt-edged and high-toned of any body of medical men in the country), a few pathologic and therapeutic facts are pertinent in this place.

1st. Uterine disease, of whatever type, independent of its effects on the nutritive organization, is strikingly similar wherever manifested, and the natural history of any uterine disease, considered by itself, is strikingly precise wherever manifested, irrespective of age, antecedent history or social surroundings. While I must avoid any misinterpretation, this pathologic fact lends color to the theory, which is sustained by the fact, that, setting aside mechanical appliance and operative procedure, the therapeutic indications in uterine disorder are limited in number and precise in application. There is a uniform inference from individual to individual.

2d. This physiologic fact finds expression in the clinical experience that the extent and ravages of uterine disorder are not to be measured by its sympathetic effect on the nutritive functions of the woman, and, conversely, profound nutritive disorders may leave the reproductive functions intact.

3d. The most appalling complications of the parturient state (at which the passive intelligence of the accoucheur is supposed to gaze with bland equanimity) may be coincident with very slight disturbance of the nutritive functions. As a maid, she is often fearful and wonderful, but it is only when her reproductive system is involved in the culminating throes of parturition, that the vision fairly dawns of how fearfully and wonderfully made she is.

It is on the basis of this independence of uterine function that an *à priori* judgment can be predicated as to the precision with which ergot can be administered in the parturient state—a judgment justified by observation at the bedside. A drug as specific in its action as ergot on the parturient uterus, should have its effects regulated by the size of the

dose, if the conditions under which it is administered are appropriate, and this is always to be assumed.

Dosage at the bedside is the fruit of experience, and this not of the average experience, but of the individual experience. The great painter replied that he mixed his colors with brains: the wise physician concocts his doses in the same menstruum. The therapeutic manuals of our fathers were no more a guide to their judicious use of drugs than the dosage paragraphs of our dispensatories of this year of grace are to you and to me. Aconite will slow down the pulse. Cursed be the college that graduates the man who would stop it altogether and at once by the maximum, or, altogether and slowly, by the repetition of the minimum dose. It is not every physical grief that needs the sledge-hammer stroke of hypodermic morphia; the infinite sorrow of humanity is assuaged better by the erotic dalliance of the milder forms of nepenthe.

It is not to be supposed that the fathers followed the text-books blindly, and, having decided to give ergot, gave it every fifteen minutes, and kept on giving it till the uterus burst, or till the child was shot out as from a catapult, with its mashed head driven through the shattered foot-board. To suppose this, or something similar, is to deny them decent judgment, common humanity and common sense. They gave ergot as we apportion all medicine, for the effect desired, and judged of the continuance and frequency by the effect produced. If they made blunders, they corrected them. It is not certain that they made more blunders than are made now. *Fortes vixere ante Agamemnona.*

As immediate proof that these observations are not fighting windmills, constructing a myth or a man of straw for the pastime of applying a torch to the effigy, let me quote a few curios from times very remote—back of telephones, moral insanity and gynecology—and compare them with some facts of the present era.

In 1826, Mr. Walter (Lancet, Vol. X., p. 54) gave four scruples of ergot in a case with prolapsed funis, and in half an hour "the pains had increased," he says, "to the utmost degree of intensity; in fact, I scarcely ever witnessed such violent uterine action." The after report indicates that the child was a little groggy for a short time, but all turned out well.

In 1827, Mr. Hill (Lancet, Vol. XI., p. 711) gave eight scruples. In twenty minutes, "its magic effect astonished every one present, and in ten minutes more the foetus with the placenta was expelled." Mr. Hill had three other cases, all of which, he was "proud to say," terminated to his entire satisfaction. The early literature is crowded with this liberal and fearless indication. These parturients were our ancestors. It is fair to conclude that if ergot had been a Herod, some of us would have had other than an Anglo-Saxon lineage.

Another fact cannot fail of appreciation. In 1827, when ergot was the novelty and surprise of the obstetric world, a member of the Royal College of Surgeons, W. Michell, published an octavo of 128 pages, entitled "*On Difficult Cases of Parturition and the Use of Ergot of Rye.*" The second five of the ten chapters in this brochure were devoted to the latter subject. So important was the publication deemed, that the editor of the *Lancet* thought it justified five columns of editorial and critical comment, saying, among other pleasant things, that it contained "highly important practical intelligence," and that he had "derived both pleasure and profit from its perusal." Let me quote two paragraphs whose force and directness cannot be questioned. To hold decided opinions is a great merit. To be able to express them with terseness and perspicuity is a high art.

"Had not the invention of the forceps by Dr. Chamberlain preceded the discovery of the ergot of rye, it would have been received as the greatest boon ever given to the medical world. That its benefits have not been more generally acknowledged, may, perhaps, in a great measure, be attributed to the prejudices of self-interest, which must clearly discern a falling off of fees when ergot shall have been extensively introduced. When rye comes into general use, the medical man will seldom be called to apply the forceps or the vectis.

"In twenty years I should not be surprised if the forceps be known only by name, as in cases in which ergot cannot be administered, turning is all that is required. This may be effected as easily when the child's head is in the perineum, as at any other period, and can be done with as much safety as in any other stage. Except, then, in the rare cases in which the Cæsarean operation was formerly recommended, I conceive there will now be no occasion for instrumental aid in cases of midwifery."

Verily the times have changed! How queerly the spirit of Michell must feel over his mistaken prophecy of fifty-five years ago, as from Paradise to-day (where he rests from his labors) he gazes down on the blast-furnaces and foundries and shops, where multitudinous and grimy hands forge and mould and burnish and nickel-plate the protean hardware for the rectification of the uterus of our cities and larger towns!

In violent contrast with this earlier history of ergot, let me state a few facts, mainly of a negative character, illustrative of the current sentiment as to ergot in parturition.

1st. The common protest of silence among medical men to which I have already referred.

2d. The Obstetrical Journal of Great Britain and Ireland passed from its cradle to its grave—a period of eight years (with an American Supplement)—and never mentioned the subject, except in 1873 to quote a portion of Mr. Tarnier's Report to the French Academy of Medicine (Nov. 26, 1872), approving a scheme which, probably, was the impulse to the Decree of June 23, 1873, permitting the dispensing of ergot of rye by druggists on a prescription of midwives furnished with a diploma (*Gazette des Hopitaux*, June 28, 1873.) Prior to that date the *sage femme* in France were not permitted to use ergot.

3d. The American Journal of Obstetrics has gone through sixteen years of publication without alluding to the subject, except (in vol. 13, p. 100) to publish, as a part of the Transactions of the Obstetrical Society of Philadelphia (Oct. 2, 1879) this statement of its president: "It is a well-established rule in this city that ergot should be given only at the end of the second stage of labor, to accelerate the delivery of the placenta and to prevent hemorrhage."

4th. So cautious and precise and manifold are the contra-indications to ergot, as stated in the later text-books, and so hesitatingly guarded are the suggestions as to its possible utility, that I submit a candid and impartial literary criticism would conclude that the bias of the several authors was strongly against its use. In point of fact, the very latest Text-Book on Modern Midwifery (Glisan) does not include this use of ergot within its covers.

If the later experience of the profession has decided that ergot is an unmanageable and extra-hazardous expedient in the parturient epoch, the case is thereby out of court. But it is by no means clear that such is the sentiment of the profession. The negative side alone appears. The profession has not been polled. That it is unsafe, as an excitant to labor pains, is an opinion open to question.

I have no objections to appear as an apologist for the use of ergot in the second stage of labor, if certain considerations be clearly apprehended and taken into account. The conditions of easy labor should all exist, minus the normal activity of the uterus, and the dose, as to size and frequency, should be apportioned to the need of the individual case.

That ergot will force a dilatation of the circular fibres, the history of the use of the drug leaves no room for doubt; but it is a painful process, and, in the present state of obstetric information, an unjustifiable expedient. One could but pity the blunder that would arouse the ergotic spasm in these circumstances.

But, given the case where a stimulant is desired to arouse the exhausted or indolent uterus (and the competency of ergot to effect this may be regarded as unquestionable), the skill with which this case can be accomplished rests on the tripod of the form of the drug, the size of the dose, and the repetition thereof, regulated by the effect.

1st. I am clear that this fluid extract is the most manageable preparation, and vastly superior to any known to the fathers. Very early in its history it was seen that the powdered ergot was erratic in its action, frequently producing nausea and vertigo. It was not long before the tincture was abandoned and the infusion came into general use. The fluid extract represents all the activity of the drug, without the solid matter,

and is uniform. It is so generally used that further comment is uncalled for.

2d. One should not speak with too great positiveness as to the efficient dose of ergot, if the subject is ever likely to be reopened and the matter subjected to critical investigation. A few suggestions will not be out of place.

It is highly probable that, where ergot is given in any stage of the parturient epoch, for the purpose of expediting delivery, for facilitating the expulsion of the placenta and for post-partum compression of the uterus, the usual doses are needlessly wasteful. I take it that dram doses of the fluid extract are the common practice.

Again, let me recall two matters before alluded to, viz.: that the action of ergot is specific on the uterus, and that, in any condition where it is likely to be given, the animal functions are not seriously, if at all, in abeyance, and its digestion proceeds with great rapidity and uniformity. Let it also be recalled how uniformly small quantities of ergotine, as a rectal suppository, produce uterine colic. Again, it is extremely doubtful whether ergot will arouse uterine action *de novo*, though some observers have stoutly contended that it will. But it is not doubtful that the uterus, during labor, is markedly sensitive to the drug. The tetanic action it inspires is familiar enough. Can it be so managed as to provoke contraction, without painful or continuous spasm? In fine, can it be made to imitate the intermittent and normal uterine pain? This is the point d'appui of all argument, and he who to-day takes the affirmative of this question must be very modest in phrasing his speech.

Again, this seems reasonable and consistent with experience. If an easily digestible preparation of ergot be administered in such a modicum that the whole quantity will be taken up by a rapid act of digestion, the effect will be proportionate to the quantity digested. This, also, is in accord with experience. For, if a quantity of ergot be taken, larger than can be taken up by one digestive act (permitting the expression), and if the ergot does not paralyze or benumb the digestive process, the specific action will be kept up until all the quantity administered is digested.

Now, I am free to confess that these two propositions can be maintained in any lying-in room, and on these rests the ergot's possibility for good or harm. Within certain limits, the first proposition involves the intermittent action, and the second, the tetanic action of ergot.

I must, again, call up a previous statement, that a marked characteristic of the reproductive organs is that their susceptibility to the action of specific medication is so uniform that fairly uniform inferences of dose can be drawn from individual to individual. So intrenching myself in

the confession of the possibilities of error, I offer the experience that ten minims of a standard fluid extract will meet the requirements of one digestive act, and exert and exhaust its specific action within a certain limit of time. The digestion of this dose will be quickened by administering it in a small quantity of brandy, or largely diluted with water.

3d. The time required for the ergot to manifest itself was very carefully noted by the observers when the drug was a novelty, and there is to be found a pretty general consent that these effects were developed in about fifteen minutes. They noted, also, what everybody knows now, that these effects were so sensible that, in the interim between the normal intermittent pains, there could be felt the hard, continuous, ergotic spasm—the true ergot pain. This ergot pain can effect delivery in one great struggle; or, it can be made to effect it deliberately by substituting the quasi-intermittent ergot pain for the constant; or it can arouse the uterus to its own normal function, and thus delivery be effected. If it be remembered that the ergot pain is *sui generis*, uniform, continuous and single, till the effect of the dose is entirely gone, the intensity and extent of the ergot pain can be regulated by the size of the dose, and the frequency of the dose will be in the keeping of the accoucheur's judgment.

Based on the same principles of dosage, I drop the hint in passing, that the dram doses of ergot given, as I suppose is the tolerably uniform practice, just before the birth of the child, is more than sufficient to produce firm contraction of the uterus, and prevent the accumulation of clots after the expulsion of the placenta. The excess often produces severe and needless suffering, called by courtesy "after-pains," but which is, in reality, the true ergotic spasm. It can be recognized in the same way as before delivery, and must wear itself out. It is not amenable to the treatment that alleviates normal after-pains. I am, also, confident that the ergotic spasm; after delivery, affects the uterus peculiarly in this, that the compression of the uterus is not in proportion to the manifest suffering. The uterus remains larger during the spasm; a certain flaccidity of the organ supervenes after the subsidence of the spasm; more and larger clots are discharged for a longer time than is the history of true after-pains, or where there is a less free exhibition of ergot.

In this discursive and apologetic way I have fulfilled the purpose of this note. But having gone so far, or having broached the subject at all, I must crave indulgence in noting a few observations.

The devices of the fathers to arouse the sluggish uterus, prior to the advent of the 19th century, are matters of history. They were crude, annoying and uncertain. Ergot and the forceps made their appearance on the obstetric arena at nearly the same epoch, and it is no mere figure

of speech to say that they have contested the race hotly ever since; their eager partisans have worn the colors of their favorites, and the dust from their chariot wheels veils from the sight prevision as to which shall wear the laurel. Ergot and the forceps are the great alternative interferences in one particular parturient epoch—the one, slow, watchful and unimpressive; the other, rapid, forcible, brilliant.

Will it be alleged that the one is an energy unmanageable, with possibilities that may not be averted, and that there are to the other but a deftness of adaptation, a quick-witted muscle, a *tactus eruditus*, a sympathetic sense, an intelligence and a conscience, the common possession of men, guaranteed by a diploma? One may well hesitate on the brink of the belief that there are more terrible possibilities in the tetanic spasm of ergot than in the hard embrace of the merciless steel. Uninformed by experienced judgment, misdirected by reckless or unthinking haste, the latter is no less potent for evil than the former. The writer has used the forceps too long and too often to raise any question as to the large range of their metallic mercy, but he, with all the rest, must bear the burden of the criticism that the best things may be abused; that men are not born equal; that intelligence varies in scope, conscience in sensitiveness, hands in deftness, experience with opportunity, and that from the lying-in room critics are excluded.

Who will assert that all the gentleness of the profession set with the obstetric suns of fifty years ago? Yet who does not rise from the perusal of Blundell's Lectures, with their chivalric tenderness and infinite detail, a gentler and better man? Under this instruction, may not the students of Guy's Hospital have gone out to duty, with an ideal in their minds of the parturient woman somewhat different from the regnant teaching of our modern text-books, wherein she appears as a hard geometric figure, made up of diameters, axes, straits and planes. Said this teacher: "He is an able accoucheur who contrives a serviceable instrument; but he is an accoucheur still abler who teaches us how to dispense with it," and we may applaud the maxim, though in our present light we may not conform to his precept that "patience and *bonhomie*" are the only instruments needed.

I have not sufficient facts at my disposal on which to base any broad statement as to the frequency or infrequency of the use of the forceps in country practice; and by that I mean the less or greater removes from the larger centres of life. I believe, however, the ratio of the frequency diminishes with the distance. I believe further (and I venture this statement in the very presence of possible contradiction and denial), that in the great centres themselves, the ratio of the frequency rises with the relative importance of the accoucheur.

The conditions of the practice of medicine in the country, the modes of life, and the disposition and apportionment of time are as dissimilar to the dispatch and formal routine of the urban magnate, under the tyranny of his office hours, as are the tumultuous unrests of Wall Street to the insipidity of a country store.

The prudent use of ergot has in it no element of hurry. On the plane of utility, where ergot and the forceps meet, the latter represents the spurring activities of city life, and the ergot is more fitly the symbol of patient waiting on the processes of nature.

The physicians, whose attention is particularly directed to the treatment of uterine disorder, and whose art has so lately sprung into such apparent importance, do not hesitate to assert that a very large, if not the major, part of the cases that come under their observation, are the immediate results of the accidents of childbirth.* The statement is lamentable enough, but the imputation on the skill of the accoucheurs of to-day is terrible. These cases are not relics of past ignorance—they are contemporaneous history. If the charge be true, the physical torture of to-day is from the childbirths of yesterday.

If, within this quarter of a century, ergot has faded from medical literature, if the forceps has assumed a prominence that casts a scorn on the prophecy of the fathers, if assistance from within at the parturient epoch has been supplanted by the substitution of forces from without, if gynecology (a name unknown in the memory of most of us) has been called into being by the necessities to which it ministers, and if its growth is a measure of the widespread necessities, if its imputation on the average conduct of labor be but a shadow of the truth, who can assert that *his* hands are clean? Who that ministers to human suffering, and who takes a pride in his profession, will not instinctively take a backward glance, and be impelled to ponder over the problem, whether the methods of the past cannot be re-studied to advantage?

* To support this statement by quotations will be wasteful of space, for their name is legion. The latest, and one of the boldest, may be found in a report of a paper presented before the Academy of Medicine, by Dr. W. E. Forrest, and published in the *Medical News*, Nov. 11, 1882, page 519.

THE MEDICAL SOCIETY OF THE COUNTY OF KINGS.

A REGULAR MEETING of the Medical Society of the County of Kings was held Nov. 21st, 1882, the President, Dr. Jewett, in the chair, and about one hundred members present. The minutes of the last meeting were accepted without reading.

The following propositions for membership were made : By Dr. Sullivan, Louis De B. Kulm, M.D., 767 Willoughby Avenue ; by Dr. Bodkin, J. F. O'Connell, M.D., 168 Jay Street ; by Dr. Rochester, S. H. Benton, M.D., 32 Madison Street ; by Dr. Healy, W. F. Millington, M.D., 216 Tenth Street ; and by Dr. Fowler, James C. Kennedy, M.D., 326 Hart Street. The COUNCIL reported the acceptance to membership of the following : John Bowen, M.D., B. H. M. C., 1878 ; E. H. Knight, M.D., L. I. C. H., 1882, and W. A. Northridge, L. I. C. H., 1882.

THE COUNCIL recommended the passage of the following resolution :

Resolved, That the Medical Society of the County of Kings learns with regret that there is danger that the Surgeon-General's Library, which is considered the most complete medical library in the world, will be merged into the Congressional Library ; and hereby urgently but respectfully requests that the Representatives in the Senate and Congress from this State will oppose any change in the present administration of the Surgeon-General's Library, and that they will use every justifiable means to preserve and protect that library under the same direction that has made it so peculiarly valuable and instructive to the entire medical profession of the United States. Adopted.

The regular scientific business of the evening was then taken up, being the Report of the Committee on Therapeutics and Clinical Medicine :

1. Dr. J. A. McCorkle : The Physiological Action and Special Therapy of Nux Vomica ;

2. Dr. E. H. Bartley : Antiseptic Therapeutics ; and

3. Dr. Alexander Hutchins : Note on the Parturient Dose of Ergot.

The paper by Dr. Hutchins was read by title.

There was no debate upon either of these contributions.

The following resolutions, which had been made a special order for this meeting, were adopted by a ballot vote of 51 yeas to 40 nays.

Whereas, It is known through the delegates of this, The Medical Society of the County of Kings, to the Medical Society of the State of New York, that the latter body did, at the annual meeting in February last, first discuss the abrogation of the entire Code of Ethics, and, that proposition having failed, did adopt the report of its Committee on the Code of Ethics, whereby that part of the Code which relates to consultations was not only practically abrogated, but a clause was substituted declaring that "members of The Medical Society of the State of New York, and of the medical societies in affiliation therewith, may meet in consultation legally qualified practitioners of medicine," which is in direct opposition to the former Code and to the Code of the American Medical Association; and

Whereas, This Medical Society of the County of Kings is in affiliation with, and is represented in both the Medical Society of the State of New York and the American Medical Association, it now finds itself with two Codes of Ethics which are in direct opposition upon the important subject of consultations, and with a by-law enforcing the Codes of both these bodies. If this County Society obeys the legislation of the State Society, it must give up its affiliation with the National Association; while if it holds to the Code of the National Association, it must subject itself to be admonished by the State Society for this rejection of its by-law; therefore, be it

Resolved, That this Society earnestly desires to retain its relations with both the State Society and the National Association, and, if possible, will do nothing to sacrifice its right to representation in either body.

Resolved, That this Society deprecates the principle of the State Society taking revolutionary action upon matters of general and important professional interest without consulting the wishes of its constituent county medical societies directly upon the points to be legislated upon.

Resolved, That this Society regrets the action of the State Society in regard to this change in the Code of Ethics, and respectfully asks that the action may be reconsidered and reversed at the next annual meeting.

Resolved, That this Society is in favor of having a Code of Ethics, and of having one that may be in substantial accord with the principles of the old code of the State Society and the present code of The American Medical Association.

Resolved, That a copy of this preamble and resolutions be forwarded by the delegations of this Society both to the State Medical Society and the American Medical Association, and that the said delegates be instructed to vote on this subject in the interest of these resolutions, upon whatever issue may arise concerning Codes of Ethics or their abrogation, because these resolutions express the will of a majority in the Society to be represented by said delegates.

The CHAIR announced that Dr. Westbrook would give two anatomical demonstrations upon the female pelvis on the first and second Tuesdays in December, at 8.30 P. M., at the Amphitheatre of the Long Island College Hospital. The subject of the first lecture, "The female pelvic floor," and of the second, "The female pelvic organs." The members of this Society were cordially invited to attend.

The CHAIR also announced a report of the surgical committee for the next meeting.

The following named gentlemen were declared members of the Society—viz.: J. A. Blake, M.D., David Myerle, M.D., and C. N. D. Jones, M.D.

Adjourned.

Ἀσκληπιὸς



ὁ Σωτήρ

Χάρμα μέγ' ἀνθρωποῖσι, κακῶν τελευτῆρ' ὀδυνῶν.

Hymn of Homer, No. XVI.

PROLIFERATIONS.

—MALE TRIPLETS. Dr. Joseph Healy reports that on Nov. 9 he attended at the birth of triplets, males, well developed, weighing about four pounds each; vertex presentation. The labor was about two hours in duration; no unusual circumstances attending it; good recovery. The boys are living. According to the doctrine of chances, Dr. H. may expect his next case of viable triplets in 1982.

—THE NEW CODE OF ETHICS adopted by the Medical Society of the State of New York at its last meeting, does not seem to meet the approval of its constituents, the several County Societies of the State. Up to the present time, the following named County Societies have, in various terms, expressed their disapproval of the action of the State Society, and instructed their delegates to use all honorable means to cause a reversal of that action at the next meeting of the State Medical Society, viz.:

Queens,	Kings,	Richmond,
Onondaga,	Cayuga,	Ontario,
Niagara,	Oswego,	Saratoga,
Oneida,	Broome,	Jefferson,
Cortland,	Wayne,	Sullivan,
Schoharie,	Monroe,	Warren,
Chemung,	Lewis,	Delaware,
Rockland,	Chataqua,	Columbia,
Orange,	Chenango,	Putnam.
Erie,	Montgomery,	
Seneca,	Franklin,	

Tompkins, Clinton and New York have voted to adopt the New Code, while Steuben has expressed its wish that all Codes be abolished.

—THE TRANSACTIONS of the N. Y. State Medical Society for 1882 are at the Rooms, and can be obtained through Capt. Charters.

—THE MEDICAL WORKS and Instruments of the late Dr. J. J. Kunz, of this city, are placed on sale at F. B. O'Connor, Jr.'s, 68 Court Street. Among the former are quite a number of German works.

—A PLEA FOR SPECIALISM. The following is the paragraph in full, from which the extract on p. 195 of this Number is taken :

“Our specialistic friends who have departed from out of the University of New York, have done a brave and a spirited act. They have struck a much-needed blow in behalf of specialism. Whatever may be the reasons assigned publicly, the real cause underlying the whole affair is to be found in the aversion of faculties to fully recognize specialists. It is always tacitly assumed that the man who treats twenty-eight feet of alimentary canal is better than he who merely looks after the interests of eighteen inches of spinal cord; or that those who ply typhoid fever patients with drugs until the disease has doggedly run its course, or those who are learnedly at hand to welcome infants whom the uterine muscles are intelligently propelling into the world, are doing more scientific and important work than those whose skill opens a new world of sight and opportunity to a myope, or arrests an approaching

amaurosis, or than those who turn back a mental disease or act as precise interpreters of the meaning of the dread symptoms of cerebro-spinal maladies. In other words, he who is most familiar with the special senses and the most important viscera—the brain and the cord—is relegated to a position inferior to the expert of an abdominal or thoracic viscus; thus blindly holding to tradition, the average ruling faculty refuses to do what business men in every walk of life are doing—reward superior knowledge and skill. It is a curious contradiction that in republican America the monarchical medical college faculty should thrive, wherein the government consists of a few grandees, whose indiscreet and superfluous boast it is that they are in no sense specialists, whilst in despotic and bayonet-ridden Europe the Universities are so republican that a tutor's vote is as weighty as a professor's. It is a rank and manifest injustice that this should be so in this country of democracy. For the continuance of such a tyranny of caste, no reason can be assigned that will not look hideous in the light of day. Time will right it, and before long. We hail then, the first rebels!"—(*Amer. Jour. of Neurology and Psychiatry*, Aug., '82, p. 399.)

—SUBSEQUENT HISTORY OF NERVE-STRETCHING. Dr. L. C. Gray forwards the following very candid note for publication:

"In my recent article on Stretching of the Facial Nerve, in the September number of THE PROCEEDINGS, my second case, the young man of 22 years, was reported as cured. Since the publication of my paper, this patient, I regret to say, has relapsed. The relief was only obtained for two months and a half. Whether his present condition is as bad as it was when he first came to me, I have no means of knowing, for I have not seen him since the first days of the relapse.

"I hope this addendum will travel co-extensively with my article and correct it. I have always suspected, and have frequently stated my suspicions, that a very material difference would be made in the percentage of nerve-stretching cures, were the gentle hand of correcting time not inhibited by hasty publication."

—CREDIT TO WHOM CREDIT IS DUE. Philip Doddridge (1702–1751), spoke of nerve-stretching, and recommended it as a religious stimulant in his *Zeal and Vigor in the Christian Race*.

"Awake my soul: STRETCH EVERY NERVE,
And press with vigor on."

—PULVIS DOVERI. People whose "inward griefs and peristaltic woes" have been relieved by the powder of Dover, do not generally know to whom they are indebted for this excellent compound. Doctor Dover was a friend and probably pupil of the great Sydenham. He com-

menced practice in Bristol, where, having made some money, he longed to make more. The Roll of the College of Physicians tells us that he joined with some merchants in fitting out two privateers for the South Seas, in one of which, the "Duke," he himself sailed from Bristol, 2nd August, 1708. On the passage out they touched at the Island of Juan Fernandez, where Dover, on the 2d February, 1708-9, found Alexander Selkirk, who had been alone on the island for four years and four months, and whom Dover brought away in the "Duke." In the April following, Dover took Ginaguil, a city or town of Peru, by storm. In December, 1709, the two privateers took a large and valuable prize, a ship of twenty guns and 190 men, in which Dover removed from the "Duke," taking Alexander Selkirk with him as master, and finally reaching England in October, 1711. After this cruise, Dr. Dover removed to London, where his practice soon became great. His patients, and the apothecaries who wished to consult him, addressed their letters to the Jerusalem coffee house, where at certain hours of the day he received most of his patients.—*Can. Jour. of Med. Sci.*

—CONSTIPATION.—Where constipation is due to torpor of the muscular layer of the intestine combined with defective secretion of the mucous membrane, Dr. Bartholow uses either one of these formulæ :

R.	Tc. nucis vomicæ.	
	Tc. belladonnæ.	
	Tc. physostigmæ.	aa f. 3 ij. M.
SIG.—	Thirty drops in water, morning and evening, or,	
R.	Ex. physostigmæ.	
	Ex. belladonnæ.	
	Ex. nucis vomicæ.	aa gr. v.
	M. et. ft. in. pil. No. x.	
SIG.—	One pill at bedtime.	

—FASTING IN ACUTE RHEUMATISM.—Dr. Wood, professor of chemistry in the Medical Department of Bishop's College, Montreal, reports in the *Canada Medical Record* a number of cases in which acute articular rheumatism was cured by fasting, usually from four to eight days. In no case was it necessary to fast more than ten days. Less positive results were obtained in cases of chronic rheumatism. The patients were allowed to drink freely of cold water, or lemonade in moderate quantities, if they preferred. No medicines were given. Dr. Wood says that from the quick and almost invariably good results obtained by simple abstinence from food in more than forty cases in his own practice he is inclined to believe that rheumatism is, after all, only a phase of indigestion, to be cured by giving complete and continued rest to all the viscera.

—A PHYSICIAN falls into a fit while making a round of visits, and is carried into a drug store.

“Send for Dr. X——,” says somebody.

“No, no, not for him,” says the dying man feebly, at the mention of his rival’s name; “if he brought me round it would advertise him! I prefer to die.”

—A PRINCE OF SCIENCE.—He has been called in to give his opinion on a case where the patient complains of a severe pain in the hip, which several other princes of science have identified as indicating divers different complaints.

“There’s nothing wrong in there!” says the new comer, positively, after examining the patient.

“But, doctor——” protest the other surgeons, each reciting his diagnosis.

“Oh, perhaps you know better than I do?” screams the prince of science, who does not tolerate contradiction. “I tell you there’s nothing wrong with the man, and I’ll prove it. (Seizes a knife, and with the speed of thought excavates a trench in the patient, laying bare the bone.) There, gentlemen, you can see for yourselves there was nothing the matter with him!”

—INFANTILE CONVULSIONS.—The adopted and regular treatment of M. Jules Simons, of the Hospital des Enfants Malades, for infantile convulsions, is as follows: On arrival, the first thing he orders is an injection of salt and water, salad oil, or glycerine, or honey, which he administers himself, as he has too often observed that the parents or the nurse have already lost their wits. If the teeth can be opened sufficiently, a vomitive is given, which clears the stomach of any food that could not be digested—the most frequent cause of convulsions. However, the attack continues but soon ceases on applying a handkerchief, on which a few drops of chloroform are poured, to the mouth, which the child inhales largely. If the convulsions reappear the anæsthetic is renewed, and the child is placed in a mustard bath for a few minutes, and then wiped dry and placed on his bed properly wrapped. Chloroform might be again administered if, after an interval, the child was seized again, and before leaving the nurse, M. Simon prescribes a four ounce potion, containing sixteen grains of bromide of potassium, one grain of musk, and a proportional preparation of opium, for he does not believe that the brain is congested in these attacks, it is rather excited, and the opium acts as a sedative. A teaspoonful of the mixture is given several times a day. On the following days the child is generally restless and irritable and ready to be attacked again, but a small blister about an inch square is applied to the back of the neck, and left on about three hours, when it is replaced by a poultice of linseed meal, and gives very satisfactory results. M. Simon, in terminating, says, “such is the treatment that I have instituted in my practice of every day.”

—THE REGULAR MONTHLY MEETINGS of the Medical Society of the County of Kings are held at 8 P. M. on the third Tuesday of each month, at Everett Hall, 398 Fulton Street.

The December meeting will be held on the 19th. The papers will be as follows: I. Amputation at the Knee-joint; II. Some Points in the Reduction of Hernia, by Dr. J. S. Wight.

Essentials of Success in Ovariectomy, by Dr. A. J. C. Skene.

Napthaline as a Wound-dressing, by Dr. G. R. Fowler.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

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Chap. XI., Art. 2, of By-laws: "Any Member elected as Delegate to the Medical Society of the State of New York, who shall be unable to act as Delegate during two successive years, shall be considered to have vacated his position as Delegate."

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Drs. J. A. McCorkle,	A. Hutchins,	E. H. Bartley,	A. R. Paine,	A. R. Matheson.
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OBSTETRICS.

Drs. J. R. Vanderveer,	A. S. Clarke,	E. Palmer,	W. Wallace,	B. A. Segur.
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SURGERY.

Drs. A. J. C. Skene,	J. S. Wight,	G. R. Fowler,	J. D. Rushmore,	P. L. Schenck.
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PROCEEDINGS
OF THE
MEDICAL SOCIETY OF THE COUNTY OF KINGS.

VOL. VII

JANUARY, 1883.

No. II.

REPORT OF COMMITTEE ON SURGERY.

SOME POINTS ON THE REDUCTION OF HERNIA.

BY J. S. WIGHT, M.D.

Seeing that the major operation, or opening the sac, in a case of hernia is one that may involve great danger, and seeing that the minor operation, in which the sac is not opened, may involve some danger, and seeing that the *taxis* is a safe procedure, especially when it is successful, any expedients that will enable the surgeon to reduce a greater number of hernia, so that fewer operations will be required, will be the means of saving life. In this statement it is implied that cases of hernia are operated on that do not require an operation, and it must be admitted that it is not good practice to operate on a hernia that can be reduced by *taxis*.

The method of *taxis* for reducing a hernia, especially one that is strangulated, that I have adopted and advise, may be described as follows :—

1. As far as possible grasp the hernial tumor with one hand ; this can generally be readily done, except when the tumor is very large. The right hand will be the best adapted for this purpose.

2. Now take hold of the neck of the hernial sac with the thumb and

fingers of the left hand, in close proximity to the ring of constricting tissues, which can generally be readily distinguished.

3. Then make gentle traction on the hernial tumor by means of the right hand, when two effects will generally supervene: (1) The hernia will be drawn out a little and liberated from the ring of constricting tissues; and (2) Some of the fluid contents, and may be some of the solid contents, of the sac, may be felt going through the hernial canal into the abdominal cavity. As the hand pulls on the tumor, it will compress it at the same time, and thus tend to express the contents of the sac. And the contents of the sac will be more apt to be expressed because the hernia is liberated from its constriction.

4. The thumb and fingers of the left hand, as it were, supplement the hernial canal, as they are near the constricting tissues, so that the sac and its contents will be prevented from expanding just outside of the outer end of the hernial canal. In one instance the thumb and fingers will accurately guide the hernial contents into the hernial canal, and in the other instance the hernial contents will swell out around the outer end of the hernial canal. In the latter instance the reduction of the dislocated intestine will be obstructed, and in the former instance its reduction will be greatly facilitated.

5. When the fluid contents of the sac begin to *go back*, then the solid contents of the sac will also begin to *go back*. The left hand of the surgeon must still continue the work it has begun, but the right hand must now, in addition to firmly grasping the hernial tumor, begin to push this tumor toward the external ring, in between the grasp of the thumb and fingers of the left hand, when generally, little by little, and sometimes suddenly, the dislocated intestine will be reduced. Of course, the rules of position and relaxation in regard to the patient should be put in force. When this method of taxis is properly carried out, it will, no doubt, diminish the number of operations for strangulated hernia.

6. In this place I may draw attention to this method of taxis, for the purpose of reducing a hernia when the minor operation is performed, since the constriction may be outside the neck of the sac. Also I may call attention to the fact that I have sometimes expanded and stretched, or, perhaps, torn more or less, the constricting band of tissues about the neck of the sac, by means of my finger, which has been pushed up under the edge of this band, carrying the tegumentary tissues before it, thus enabling me to reduce a hernia because the canal has been enlarged. At times I have found this a most valuable expedient, and have never known it do any harm.

In order to illustrate the procedure above described, two cases of femoral hernia may be related:

First—Mrs. S., widow, 63 years of age, was seen by me for the first time January 6, 1882. She had a strangulated femoral hernia on the left side, about as large as one's fist. The swelling had been down about a week; the patient had been vomiting for three or four days; the temperature was about 99° ; the pulse was about 100; the abdomen was soft and was not tender; the bowels had not moved for a week; there was no special tenderness about the tumor; the patient was anxious and depressed in spirits; two days before I saw this patient a physician visited her, and did not succeed in reducing the hernia; another physician saw the patient on the evening before I saw her, and did not succeed in reducing the hernia; the patient was under the impression that an operation must be performed, and that she would die.

I saw this patient about 5 o'clock P.M., January 6, 1882, and put in practice the method of taxis above described, and reduced the hernia in about fifteen minutes; ordered rest, anodynes, and a mild diet, followed in two days by a dose of castor oil. This patient made a rapid and excellent recovery.

Second—Mrs. M., widow, 42 years of age, much addicted to alcoholic drink, was seen first by me January 16, 1882. She had a strangulated femoral hernia on the left side nearly as large as one's fist; it had been down for nearly one week; the patient had been vomiting for two days; her temperature was $98\frac{1}{2}^{\circ}$; the pulse was about 110; the abdomen was soft, and the furrow in the inguinal region was deep, as there was much adipose tissue. Her physician advised an operation, and was of the opinion that she would die without an operation. The patient declined an operation.

I saw the patient about half-past one P. M. of January 16th, and in about ten minutes reduced the hernia by means of the method of taxis, above described. In the evening, the patient's bowels moved three times; rest, and a mild diet, completed the cure in a few days.

I need not take up time by reporting other cases of femoral hernia of a similar kind, that I find recorded in my notes; nor need I mention cases of inguinal hernia, that I have from time to time reduced by the same method—avoiding operations, and saving life. My proposition is this: Some cases of strangulated hernia that have been operated on could have been successfully treated by the above described method of taxis; of course, taxis must at times fail, even after the minor operation, and I have seen cases where the reduction has been impossible after the major operation.

AMPUTATION AT THE KNEE-JOINT.

BY J. S. WIGHT, M.D.

The operation which I have performed at the knee-joint may be described as follows :

First.—There are three important land-marks to be noted: (1) *The head of the fibula;* (2) *The inner tuberosity of the tibia;* (3) *The patella:*—*The head of the fibula is the leading land-mark.*

Second.—The knee-joint may be found by flexing the leg so as to meet the thigh at a right angle. The surface of the upper end of the tibia will be under the posterior surfaces of the condyles of the femur, and at a distance from the front of the femur equal to the antero-posterior diameter of the femoral condyles will be found the knee-joint; or, when the leg is fully extended, the most distal point of the patella will not be far from the knee-joint.

Third.—The head of the fibula is generally about one inch below the knee-joint. The apex of the patella does not always, however, mark the position of the knee-joint. But the head of the fibula has a constant relation to the upper end of the tibia, while the patella has a variable relation to the upper end of the tibia as the leg is flexed and extended.

The following points of my operation may now be noted, namely:

1. Find the position of the knee-joint, by observing the position of the apex of the patella, when the leg is extended, and by observing the upper end of the tibia, when the leg is semi-flexed. The surgeon can be quite sure of finding the knee-joint by observing these two points.

2. Find the head of the fibula, which will in general be easily felt about one inch below the knee-joint. The initial incision should always begin on the top of the head of the fibula and extend directly downward on the fibula about three or four inches, and should be made down to the bone. In this way the inferior external articular artery will not be cut.

3. A second incision should now be made on the inner side of the leg, directly opposite the head of the fibula, beginning over the posterior part of the tuberosity of the tibia, and extending directly downward along the posterior border of the tibia, so that the knife will move mostly back of the bone, a distance of three or four inches. The inferior internal articular artery may or may not be cut.

4. A third incision, nearly transverse, but having a slight convexity downward, must now be made, across the anterior aspect of the leg, from the second to the first incision, nearly three inches below the knee-joint—*down to the bone.*

5. These three incisions mark out the anterior flap—which must contain the soft parts down to the periosteum. To dissect up all the tissues of the anterior flap down to the periosteum all the way up to the knee-joint is an important part of the operation. In making the anterior flap the anterior tibial recurrent artery will soon be cut, and will by its anastomoses aid in supplying blood to the tissues composing this flap.

6. The tendo-patellæ must be cut through, directly over the joint, leaving the patella in the upper part of the anterior flap. In case of disease making it difficult to find the knee-joint, place the edge of the knife across the joint as nearly as possible, and rock the blade up and down, at the same time pressing backward, and when the knife is in the right place it will cut into the joint.

7. (1) The soft parts must now be dissected up from the bone and the external lateral ligaments to the knee-joint, where these ligaments must be cut through into the joint.

(2) The soft parts must then be dissected up from the bone and the internal lateral ligament to the knee-joint, where this ligament must be cut through into the joint.

(3) It is not always easy to raise up the soft parts on the sides of the joint; but with care during flexion of the leg, this step in the operation can generally be accomplished without much delay.

(4) The inter-articular cartilages must, in the next place, be divided, whilst the leg is being flexed more and more toward a right angle with the thigh, leaving the semi-lunar cartilages attached to the upper end of the tibia. During this step of the operation care must be taken to avoid cutting the cartilage on the femoral condyles, although I have never seen any harm come, when thin slices of this cartilage have been cut off by the amputating knife as it finds its way through the knee-joint.

8. An amputating knife must now divide the posterior ligament well down, close behind the upper end of the tibia, the blade being placed against the bone, and in the first and second incisions cutting a posterior flap about one inch longer than the anterior flap. When the knife comes out of the tissues, it should be almost directly backward, or as the limb is placed, directly downward, so that this flap will be nearly quadrangular. Nearly all of the muscular tissue may now be removed from this flap by the amputating knife. If the inferior internal articular artery has not been cut before, it will be liable to be cut in making the posterior flap, but this does not appear to interfere materially with the arterial supply.

9. (1) The artery, which lies near the bone, is now tied. In one instance of high bifurcation I tied the tibial arteries.

(2) The vein, which lies next to the artery, is then tied, to prevent hemorrhage in the first place, and at a later period to prevent absorption of septic material.

(3) The nerve, which lies nearer the surface, is drawn out and cut off, to prevent, as far as possible, an irritable and painful stump. I desire to draw especial attention to the ligation of the vein and the excision of the end of the nerve, because I am confident these are two points of good surgical practice.

10. When the flaps are completed, the base of the anterior will be about one inch wider than the base of the posterior flap, and the points where the first and second incisions began will be drawn up to the distal end of the femur, but the anterior flap will easily and completely cover the femoral condyles, and the patella will fall well into the inter-condyloid groove. The posterior flap will appear to be too long, and the surgeon may be tempted to make it shorter, especially if he has in mind the operation of Carden. Let not this mistake be made, for the soft parts on the posterior aspect of the thigh have a marked tendency to contract, and the line of union of the flaps will finally be on the lower and posterior part of the femoral condyles: Thus, leaving the anterior flap to cover the entire lower—or distal—surface of the femoral condyles, so that pressure can be made on the end of the stump without making pressure on scar-tissue.

11. Let me go back a little in my description: After the hemorrhage has been arrested, a drainage-tube is put between the bases of the flaps against the femoral condyles, so that an end will project from each side. The patella, as before noted, is left in its normal place on the condyloid end of the femur. The first suture should be put through the middle of the ends of the flaps. The flaps may then be brought together from this point in the directions of the outset of the two primary incisions, by means of sutures.

12. The stump is now laid on a bed of oakum. A cover of oakum is laid over the stump. A wide sand-bag of proper weight may be, if required, laid over the thigh, so as to gently restrain the action of the muscles. An opiate will tend to relieve from pain, prevent spasm, and cause sleep and rest.

There are some important points involved in the operation above described that may be considered in the following remarks :

1. Beginning the two primary incisions, that are made on the sides of the limb, about an inch below the knee-joint will leave the angles of the flaps near the distal surface of the femoral condyles, when the operation is completed. But when the incisions begin on the femoral condyles, the distal end of the femur will be unnecessarily exposed, and the flaps

may be too short, so that the operator may have to cut off the condyles, thus making an amputation of the thigh—whereas it is his intention to operate at the knee-joint. This would certainly be a grave mistake, for every inch that the surgeon takes from the femur adds to the peril of his operation.

II. Beginning the two primary incisions as low down as the top of the head of the fibula, making the two flaps quite rectangular, and by making the anterior flap as thick as possible, will leave both flaps well supplied with blood-vessels, and the result will be that the flaps will maintain their vitality in the most perfect and desirable manner. In fact, in all the operations at the knee-joint I have performed by the above described method the flaps have behaved very well.

III. In my cases the anterior flap always has been, and no doubt will be, drawn gently over and make an excellent covering to the femoral condyles, than which there could be no better result. This normal tissue-cover of the stump is admirably adapted to sustain any reasonable pressure that it may receive from an artificial limb.

IV. The posterior flap will in due time contract and draw its line of union with the anterior flap, so as to bring it just behind the femoral condyles. The internal limit of the union between the flaps will be drawn up more than the external limit. This result will be due, in the main, to the adductor muscles of the thigh.

V. In this place attention may be drawn to the fact that it is not always possible beforehand to estimate exactly how far flaps will finally contract. It is better to have flaps a little too long than to have them a little too short; so I advise operators to make them long enough. In my opinion, it is a great mistake to make the posterior flap too short, for a painful scar just back of the femoral condyles will give both the patient and surgeon great anxiety and trouble. In fine, let me not condemn other operations at the knee-joint, but let me say a few words in commendation of the operation that I have just described. The last operation done by me at the knee-joint was performed on the 27th day of October, 1882, for compound fracture of the leg, in a young man, and the result has been most satisfactory. Hence I recommend this method of amputating at the knee-joint; (1) because the operation is readily and safely performed; (2) because the flaps will not be likely to perish; (3) because there will be a good tegumentary covering for the condyles of the femur; (4) because the operation will be apt to conserve the life and comfort of the patient, and (5) because it will make a stump-end suitable for pressure.

NAPHTHALIN AS A WOUND-DRESSING.

BY G. R. FOWLER, M.D.

A larger experience in the use of antiseptics in the treatment of wounds has brought conviction to the minds of many who have been slow to acknowledge their usefulness. The opponents of asepsis and antiseptics, who have sneered either openly at those whom they assert to be frightened into bringing the most deadly weapons to bear upon enemies scarcely discoverable with the aid of the microscope, or have "damned with faint praise" the use of agents aseptic and antiseptic, have gradually grown less and less in number, until to-day there are very few, if any, surgeons who do not in some way or another seek to obtain immunity from disaster in wound treatment by the systematic employment of some antiseptic agent.

That the fear entertained by some of the dangers arising from exposing large surfaces to the action of carbolic acid were not unfounded, has been proven by the now numerous reported cases of carbolic intoxication on record; hence, investigators have turned their attention to seeking out some equally reliable yet safe antiseptic. Iodoform, received with general favor at first, has suffered a check, and its field of usefulness has been circumscribed, to a considerable extent, by reported cases of its fatal effects. Its use has been forbidden on the ground of its dangerous effects in at least one surgical clinic* in Germany, and a reaction has set in against it in some quarters in strange contrast to the enthusiasm that heralded its introduction as a wound-dressing. This has risen, in great measure, from its indiscriminate employment in unnecessarily large quantities. Extensive wound cavities have been filled with it, and it would appear to have been the boast of some operators that their patients could bear large quantities of the drug in their joint cavities, rather than an endeavor to demonstrate how small a portion could be made available, yet efficient. During the late war in Egypt, the English surgeons found that the most reliable provisional, as well as permanent, dressing, consisted in the dusting of the parts with iodoform, after thorough irrigation with a 2½ per cent. solution of carbolic acid, or the application of a solution of chloride of zinc, and subsequent dressing by means of a strip of oil-silk, or what is known as "Lister's protective," and a few layers of gauze or borated lint or cotton. The oil-silk was not used as a protective to shield the wound from any noxious effects of the iodoform, inasmuch as the latter was applied next to the

* Prof. König, of Göttingen.

wound itself, but simply as a ready means of keeping the dressings from adhering to the wound when it became necessary to redress the parts.

Carbolic acid will probably continue to hold its place, from its readiness of application as a means of irrigating wounds which have been exposed to septic influences; and, with the merits of chloride of zinc more fully appreciated, it will be found that scarcely anything else will be needed for that purpose. But there are occasions where large wounds must necessarily be left to granulate—for instance, those made by operations through the vagina, as well as those within the rectum and oral cavity, and the cavities remaining after extirpation of masses of infiltrated and suppurating lymphatic glands, etc.; it is here that is particularly needed some efficient, yet safe, antiseptic; and it is in these cases that carbolic acid is difficult of application, and in which both it and iodoform have been condemned as unsafe.

As the germ theory of the origin of the sequelæ of wounds becomes more fully recognized as an accomplished fact in surgical practice, increasing demands are made by the scientific investigator upon nature and the chemical laboratory for the production of agents capable of destroying the life of, or nullifying the evils arising from, the presence of specific germs in the organism, without doing injury to the individual. The most recent, as well as the most promising addition to our means of combating sepsis in all its varied forms in wound treatment is that which has been brought forward by Lücke, of Strasburg. The agent proposed by Lücke is naphthalin, a product of the distillation of coal-tar, and it is to the claims of this article as an antiseptic in the treatment of wounds that attention is now invited.

Naphthalin, in a pure state, is a white substance, occurring in laminated crystals; its formula is given in works upon chemistry as $C_{20}H_{14}$. It forms wherever organic bodies, especially those containing an abundance of water, are burned. Coal-tar contains it in large quantities, and it is obtained by subjecting this substance to distillation. It passes over after the coal-oils, and it is produced by passing the vapor of coal-tar through red-hot tubes. It is derived from the residue of gas manufacturing, and not unfrequently clogs up our gas-pipes. In its crude state it is a brownish yellow, sand-like substance, containing an indefinite quantity of the phenols. It may be purified by sublimation with charcoal, and, as before stated, when in a pure state, is a white crystalline body. It has an odor decidedly like that of coal-tar, and a slightly aromatic taste; its specific gravity is 1.05; it is volatile at any temperature, but melts at about 176° Fahr., and crystallizes upon cooling; it boils at 420° Fahr. It is inflammable, and burns with a lurid, smoky flame. It is but sparingly soluble in water and in the secretions of wounds, but

its gaseous vapor is given off readily at the temperature of the body, and especially when in contact with moist surfaces; it is likewise insoluble in alkaline and acid fluids; it is readily dissolved by ether, hot alcohol, hot concentrated sulphuric acid and the different ethereal and fatty oils. It is deposited from its alcoholic solution in white lamellar iridescent crystals. In the sulphuric acid solution a sulpho-naphthalic acid is formed. Naphthalin combines with chlorine, producing two chlorides; these latter, upon further investigation, may prove serviceable and available as germicides. When exposed to a temperature of 300° Fahr., naphthalin sublimes quite rapidly in thin scales, and the atmosphere of a room can be thoroughly saturated with it in a gaseous state by simply adding some of the crystals to water and heating it. If the latter be continued for some time, naphthalin will be precipitated upon the walls of the apartment. If crystals of naphthalin are simply strewn upon the floor, the same result will take place, only more slowly. Nearly all of the samples obtainable contain more or less of the phenols as an impurity. The following test for pure naphthalin has been suggested by Dr. Schulte, of Strasburg: Dissolve a small quantity of naphthalin in a weak solution of chloride of sodium; heat to a boiling point—cool, and filter. If the filtrate is made slightly acid and a watery solution of bromine is added, phenol being present in small quantities, a milky condition of the fluid appears; if present in larger quantities, a more dense white precipitate, the bromide of phenol, is formed.

Naphthalin produces no poisonous effects upon man and the higher animals when given internally or applied to large absorbing surfaces, but it is most efficiently destructive of low vegetable and animal organisms, such as fungi, spores, small insects, etc. The preservation of meats, after exposure to smoke, is partially due to the influence of this body. It, therefore, belongs to the class of germicides, and bids fair to prove of value as an aseptic and antiseptic in the treatment of wounds.

In my own experience with naphthalin I have noticed that when it is used in an aseptic manner, that is to say, when it is brought in contact with fresh wounds that have never been in a septic condition, they continue in an aseptic, and consequently in a healthy state; and that septic and unhealthy wounds, indolent ulcers, ulcerating cancerous growths, phagedenic chancres, etc., rapidly assume a healthy appearance when its antiseptic action is brought to bear upon them. This is due, without doubt, in the first place to an efficient protection of the wound from septic influences, and in the latter instances to a complete and thorough disinfection of the wound. Its application does not interfere with free drainage from wound surfaces; in a powdered state it may be applied directly to the cavity, or over the parts, after suturing the edges.

Serum and blood will percolate through it precisely as they would through sand. As an additional advantage, it does not unite with wound secretions to form crusts or scabs.

I have found, as a simple and convenient method of employing naphthalin, that of using it in substance, finely powdered. After thoroughly disinfecting the wound—if it is not already aseptic—and surrounding parts with a solution of carbolic acid or chloride of zinc, suturing and making proper provision for drainage, I cover the parts to be dressed with a narrow strip of oil-silk previously dipped in a 1 to 40 solution of carbolic acid, and having a perforation here and there to facilitate the egress of whatever secretions may accumulate beneath it, as well as to permit the vapor of the naphthalin to penetrate to the wound itself. This also serves the purpose of preventing the dressings from adhering upon removal. I then make a roll of absorbent cotton about half an inch in diameter, and in length sufficient to enclose the wound and an inch or more of the contiguous parts; this is wrung out of the solution of carbolic acid or chloride of zinc, and disposed as a ring encircling the wound and adjacent surface. Within the space thus isolated, I sprinkle the naphthalin in a powdered state to the depth of a quarter of an inch or more, place a dressing of absorbent cotton over it, and apply a muslin roller over all. This dressing is not disturbed until the wound secretions make their appearance through and soil the bandages, or some other indications exist for their removal. In a recent case of Hueter's operation for resection of the head of the first metatarsal bone for hallux valgus, the dressings were first removed at the end of eight days. The parts were in a typically aseptic condition, and only the odor of naphthalin gas pervaded the dressings. In the case of cavities left after operations for the removal of suppurating buboes, necrosed bone, etc., simply packing the cavity in all of its recesses, after thorough disinfection, and applying a dressing of absorbent cotton, is found to be sufficient. After operations within the vagina and other natural cavities having outlets, absorbent cotton, in the meshes of which naphthalin has been incorporated, either by saturating it with its ethereal solution and subsequently drying, or simply by rubbing in the powder, may be used. Dressing materials, gauze, etc., may be especially prepared in the same manner as like dressings are prepared containing carbolic acid and iodoform.* The method above described possesses the merit of simplicity, however; as to its efficiency, I can bear testimony with great positiveness.

As to the possibility of any dangerous symptoms arising from its free

* The enterprising firm of Seabury & Johnson, of New York, have in preparation for me antiseptic gauze and antiseptic absorbent cotton, impregnated with naphthalin.

use, I can only say that Lücke and Fischer, of Strasburg, have used it largely, and no disturbances of any kind whatsoever have followed its use. In my clinic at the Bushwick and East Brooklyn Dispensary I have now employed it in a large number of cases, in both young and old, feeble and strong; filling large cavities and applying it unsparingly, I have always met with the best results following its use, and never with a single untoward sequence. I have found it convenient of employment, its odor is not more objectionable than that of carbolic acid, and certainly not as disagreeable to the average nostril, nor as difficult to get rid of as that of iodoform.

Its price ranges, according to its purity, from twenty to eighty cents a pound. I have succeeded in procuring a fairly pure article from Lehn and Fink, of New York, at the latter price; I have no doubt, as it comes into more common use, it can be obtained at a much lower price. The cheaper varieties are sufficiently pure for sprinkling about the floors of hospital wards, water-closets, etc. As a dressing for wounds it certainly is cheaper than any other efficient antiseptic thus far discovered.

THE ESSENTIALS OF SUCCESS IN OVARIOTOMY.

BY A. J. C. SKENE, M.D.

I have long entertained the opinion that ovariectomy is the most difficult operation in the whole field of surgery. This is, however, a matter of opinion and may be an error on my part, but one thing is positively certain, viz.: that a thorough knowledge of surgery and all attainable dexterity and skill in operating can be employed with advantage in removing ovarian tumors. This operation differs from all others, that I know of, in the number and variety of complications which it affords. It is seldom that two cases, exactly alike, occur in the practice of any surgeon, hence it is not until a very large number of cases have been seen, that the operator is prepared to meet all the conditions which may come before him. To the operator of limited practice, the operation in this respect often presents the characteristics of a new investigation. To this extent, then, the operation is unlike anything else in surgery. Most all other operations are, to a great extent, definite; the anatomy being the same and the *modus operandi* fixed according to well-defined rules. The surgeon has it in his power to learn such operations by practice upon the cadaver, until he may be almost master of his work (if he has in him

the surgical diathesis) before touching the living subject. No such opportunity is offered to acquire the art of doing ovariectomy. The division of the abdominal walls, the first and simplest steps in the operation, may be studied and practiced upon the cadaver, but here ends the value of dissection as an aid to the ovariectomist.

Books and lectures, then, are the most available sources of information, but this reading and listening to others talking, although a means of acquiring a knowledge of science, is a poor way of learning how to do an operation.

It is true that one may familiarize himself with all the steps of an operation and the complications which may be found in each case, and he may be able to recall them at will, and think of them clearly before and after an operation, but to recognize the indications and promptly meet them while operating, can only be learned by practice.

The first essential, then, is to know how to operate—a self-evident proposition this, which need not be made here, were it not for the fact that many try to perform ovariectomy who are not qualified to do so. It is a notorious fact that this most important of operations has been performed by many who had no claim to being called surgeons. Obstetricians who, having turned their attention to some of the plastic operations of gynecology and succeeded, have next taken to ovariectomy. A few, bolder still, have made their debut in surgery as ovariectomists, without any previous surgical experience. Why men should be found who will undertake this operation while they would shrink from iridectomy or lithotomy, is a difficult question to answer. Perhaps the difficulties in the way of learning to do this operation may account for it. Perhaps it may be because, in this country, all men are supposed to be born free and equal to the task of removing ovarian tumors.

It is clearly evident that one should be well grounded in the science and art of surgery before taking up ovariectomy. The consummate surgeon can readily transfer his art to this department of abdominal surgery, with far more hope of success than one who seeks to acquire skill by practicing ovariectomy as his maiden effort.

The best and surest way of all to qualify for this operation is to secure facility in general surgery, and then take lessons of some successful operator; to witness, and, if possible, to assist in a sufficient number of operations to see the different kinds of cases and the various complications. By such means the surgeon can secure one great element of success, a knowledge of manipulations. Next to knowing how to operate is to obtain competent assistants. An operator of large experience may be able to do the work with assistants who know little, if anything, of the operation, his familiarity with the work being such that he can give

much of his attention to those who are helping him, and so command success. It is quite different with one of more limited experience. His whole time and attention is taken up with that which he is doing himself, and if his assistants are unacquainted with their duties, they generally hinder rather than help. It is a sad sight to see a beginner, with untrained assistants, trying to do ovariectomy. The ease with which they make simple things complicated, and lose time in hurrying, is quite extraordinary. I know this, from having played the role of operator and also assistant when I did not know either of the parts.

Skill in diagnosis is a means of success of prime importance, and for many reasons should have been disposed of first; but I put the operation first in my argument simply because I believe that more failures come from poor operating than from errors in diagnosis.

Our text-books give all the rules and means of diagnosis so fully that no one needs more theoretical instruction—but here again much practice is needed. Diseases of the ovaries present such an endless variety of physical signs that a very large experience is required to see all the different kinds of cases. Ovarian tumors differ so in their form, composition and complications in the way of adhesions, that their real nature is difficult to make out. Again, there are many abdominal tumors and products of disease which simulate in their physical signs ovarian tumors so closely that experts of long practice are at times unable to make a correct diagnosis. Still, great accuracy can be attained in diagnosis by long and careful observation, and that adds largely to the success. In many affections we can successfully adapt our treatment to the deranged conditions manifested, although the exact nature of the pathology may be unknown; but in ovarian tumors we must have rather definite ideas of their character before we can begin their surgical treatment.

Ovariectomy, as an operation, differs so much with the different operations, both as regards the methods of procedure and results obtained, that I propose to notice some of the conditions upon which the success apparently depends.

Dexterity on the part of the operator, and all available means which save time and secure accuracy, are obvious necessities and need not be urged in this connection. In an operation of such magnitude the question of anæsthetics requires a passing notice. Sulphuric ether has still the best reputation. Its administration should be prompt and carefully kept up. The less ether that the patient takes the less the danger and the better the conditions of the patient after. Fifteen or twenty minutes wasted in anæsthetizing gives just so much unnecessary blood poisoning and to some extent retards recovery. Giving nitrous oxide gas first, and following it up with ether, is the most rapid way of anæsthetizing, and

has given great satisfaction in some cases which I have seen. I have long been satisfied that the mixing of the expired air with the vapor of the ether to be inhaled, which occurs in the usual way of giving ether, is objectionable; so also is the low temperature of the ether vapor as usually given. It is, or has been, very difficult also to regulate the quantity of air to be admitted when it is desired to render the anæsthesia less profound. To obviate all these objections I have employed this apparatus. It is simply a reservoir constructed on the principle of the Ellis apparatus, to hold the ether and the long tube and inhaler used for nitrous oxide gas. By this arrangement the ether is thoroughly vaporized and raised in temperature by passing through the tube. The expired air passes out through the escape valve, and the quantity of air to be mixed with the ether is regulated by the other valve. Pure air, or pure ether, or half and half, or any proportion of the two, can be employed in this way. I think it is the best that I have seen, but others may find that I am mistaken. There is, of course, nothing original about it, except in the adaptation of means already in use.

I have clearly in my mind that this report is being made to my peers, hence I will not dwell upon the several steps in the operation, but only refer to some of the recent improvements in the managements of complications.

First, in regard to firm adhesions. The forcible and reckless breaking down of these has given way to the practice of seizing them with compression forceps, carefully dividing, or breaking them and arresting all hemorrhage before losing sight of them. Again, in tumors which cannot be emptied by tapping, but require to be broken down, there is great danger from hemorrhage if there is much vascularity. This can be obviated by finding the pedicle and securing it temporarily with a compression forceps; a very important and life-saving procedure in such cases.

In the management of the pedicle we find that even the renowned operators do not all agree. Through the influence of the most successful of all operators, I am firmly convinced that the cautery gives the best results, and I am also satisfied that it is because the method of using it is not fully understood that it is not more generally employed. The object is to desiccate at least half an inch of the end of the stump and to avoid charring it. This can only be accomplished by strongly compressing the pedicle, using a heavy clamp, with blades half an inch thick, and then heating it with a very heavy cautery until the portion in the grasp of the instrument is thoroughly desiccated. The stump thus treated looks like a piece of translucent horn. The divided ends of the vessels are completely closed, which guards against hemorrhage. I presume

that the end of the stump does not slough, but becomes hydrated and finally organized.

The advantages of the cautery may be briefly summarized as follows:

It is a reliable way of controlling hemorrhage, it leaves the stump in a condition requiring the least reparatory care, and finally, it avoids all sources of irritation such as that which the ligature gives rise to.

I have recently employed a cautery clamp which, I think, has some merits worthy of notice. It compresses the pedicle on four sides. The long blades keep the tissues from spreading, while the short sliding blade presses the tissues against the other cross-bar. The advantage of this is that the pressure upon the pedicle is equal at all points, and it thereby gives a smaller stump. The trouble with the old straight clamp is, that it spreads out the pedicle too much, and while it firmly holds the central or thickest part, the outer edges are liable to slip out of its grasp.

The next and perhaps the most important essential of success is cleanliness, or, to put it technically, antiseptic methods of operating. Surgeons were beginning to feel a certain sense of security in performing ovariectomy when they carried out all the details of the Listerian method; but more recently they have found that carbolic acid in place of saving patients, sometimes sacrificed them. When the dangers of carbolic acid spray in ovariectomy were first announced, many surgeons thought that Thomas Keith had given up antiseptic surgery; but that great surgeon is still as earnest and enthusiastic in his war against dirt as he ever was. Although he has given up the use of the spray, because he found the good that it did was counterbalanced by its injurious effects, he still retains all the other known elements of antiseptic surgery. These elements I understand to be, first, to keep wounds free from extrinsic germs, which are in themselves injurious to living tissues, or which favor morbid action in the tissues; and on the other hand to provide for the escape of morbid material which may be developed in wounds. To prevent the entrance of septic germs, perfect cleanliness of everything which pertains to the operation is necessary. The carbolic acid spray can at most only disinfect the air in the operating room, and consequently it is only one fraction of the antiseptic method of operating. Clean operators and assistants, clean instruments, sponges and everything which may directly or indirectly come in contact with the patient before, during and after the operation, are all of the highest importance. Still more, it is absolutely necessary to keep all things clean during the operation. A clean, fair start may be made; but during the operation the operator's hands and the instruments may become contaminated by contact with the contents of the cyst and the patient be exposed to septicæmia. This has often occurred when the spray has been fully and faithfully used. In-

deed, if too much dependence is placed upon the spray, there is great danger of contamination from want of care in other respects. Some of the fluid contents of the cyst may enter the abdominal cavity, or the hands of the operator or his assistants may become soiled from the same source, and mischief may be wrought in that way. In short, it is exceedingly difficult to guard against all sources of uncleanness in this complicated operation. I think, then, that if all the other essential elements of antiseptic surgery are carefully observed, the spray may be left out and still a high and perhaps the highest success can be attained. But spray or no spray, too much cannot be said in favor of antiseptic in relation to ovariectomy.

There is still another fact which stands out prominently, and upon which success depends, and that is the management of the dead material which may be unavoidably left in the abdominal cavity, or that may accumulate there after the operation. All the members of this Society whose fellowship dates back ten years, must remember the paper read by Dr. J. Marion Sims, in which he pointed out the dangers of the bloody serum which so often accumulates in the abdominal cavity. They will also remember how he urged, with all the force of his genius and enthusiasm, the necessity of removing that often fatal material, by drainage. He at that time advocated drainage from the sac of Douglass through the vagina. That way has been supplanted by other and better methods, but what of that? his views were based upon the principles of the highest order of modern surgery, and to-day are held in higher estimation than they were then. It is true that within the last year or two there has been some difference of opinion regarding the value of drainage. The great men in London have laid it aside as a rule, while the lion of the North still employs it and insists that he saves many of his patients by it. When such great authorities are at war, the junior ovariectomists of Brooklyn may well pause to inquire what the results of this conflict will be.

By the dim light of a not very mature judgment and a very limited experience, I can see that those who employ drainage have the best of it. I incline to this view because Keith, who practices drainage when necessary, still scores the highest number of successes; and because the reasoning against drainage by those who have given it up does not appear to fully harmonize with the facts in the case. It is claimed that if ovariectomy is performed with all the attendant means of antiseptic surgery, including the spray, any fluid which may be left or that may accumulate in the peritoneal cavity, is harmless. Spencer Wells states that either fluids do not accumulate after the use of antiseptics, or if they do collect they do not putrefy, but are absorbed without injury.

Now it is difficult to understand how antiseptics used in the operation could prevent the accumulations of serum in cases where there were many and extensive adhesions; and on the other hand, it is equally incomprehensible that carbolic acid in sufficient quantity should remain in the abdominal cavity and disinfect the fluids which transude from broken surfaces. Without daring to decide the matter, or to express any positive opinions, I may state that the truth appears to me to be this: Antiseptic operating will lessen the danger to a very great degree, but there ever will be cases which call for drainage.

The value of drainage depends largely upon the mode of using it. The method which I have usually seen practiced in this country is to pass a tube through the lower angle of the wound down into the sac of Douglass and closing the outer end of it. The cork is removed several times a day and the fluid pumped out. This gives a kind of intermittent drainage which is very imperfect. The method which I obtained from Dr. Keith is much better. In place of closing the end of the tube he passes it through the centre of a piece of rubber cloth, and then places a carbolized sponge upon the end of the tube. The rubber cloth is folded over the sponge and tied securely with a string. The tube and the sponge are thus excluded from the air, and any fluid which accumulates wells up through the tube, and is taken up by the sponge. The sponge is changed several times a day, and any residual fluid which may remain is pumped out at each dressing. In this way continuous drainage is kept up, and still a perfect antiseptic dressing is maintained. This may appear to be a simple matter, but it constitutes the difference between perfect and imperfect drainage. In a case operated upon last summer I obtained twelve ounces of fluid in thirty-six hours by this method of drainage, and the temperature of the patient never rose above normal, excepting one day when it reached one hundred, and remained there for a few hours. This case alone would be sufficient to demonstrate both the safety and value of drainage.

In addition to the requisite skill in diagnosing ovarian tumors, it is highly essential to success to make a correct estimate of the patient's general condition before operating.

An incipient disease of some of the organs of general nutrition may escape the notice of the ovariologist, and cause a fatal issue, no matter how skillfully the operation may be performed. Prominent in this regard is diseases of the kidneys. These organs should be carefully interrogated in all cases before operating. The same rule applies to all the important organs of nutrition, because any cardiac, hepatic, pulmonary, or renal lesions, although not marked or threatening the life of the patient, may still be sufficient to turn the scale to the fatal side after such a formidable operation as ovariectomy.

I well remember one case which illustrates this point. The patient was over sixty years of age, and appeared fairly well. Her nutrition was poor, it is true, but we supposed that that was due to the size of the tumor. During the operation, while trying to control the hemorrhage from adhesions high up in the abdomen, I caught a glance of the liver, which was far advanced in fatty degeneration. She lived a week, but died, as I think, from her hepatic disease, rather than ovariectomy. Had a more complete diagnosis been possible in this case, I would have had one less on the unfavorable side of my statistics.

I have been able to do little more than briefly mention a few of the essentials of success in ovariectomy in the remarks which are here presented, not to afford information to my peers, but rather to show that I am diligently seeking to qualify myself for this very important operation, and in the hope that I may obtain more light on the subject from contributions which may follow in the discussion by members present.

DISCUSSION.

DR. REESE referred to a statement in Dr. Wight's paper, that he (Dr. W.) had seen cases where, after operation, hernia could not be reduced. He would like to know why it could not be reduced.

DR. WIGHT replied that, in certain cases, when a hernia has been very large and the strain very great, and where an operation has been deemed advisable, and the operation had been performed, intestines were so matted down that it was impossible to reduce it because of the adhesions. It was almost impossible to pass them through the hernial canal under the circumstances. His report was simply on his own operation, and it was not his intention to go into a full account of the subject in general in his paper.

DR. REESE did not understand, when the paper was being read, that reference was made to the difficulty of reduction when adhesions existed. Had that been the case, he would not have made the inquiry.

DR. WIGHT had never had any experience with naphthalin. There were one or two points in regard to antiseptics which he wished to refer to. The first is generally disregarded by surgeons in their discussions; and that is that there are some people who can be mutilated to almost any extent, in spite of which they will live; whereas others will die under the smallest operation, and after the smallest injury. The former will live in spite of carbolic acid, or naphthalin, or any other antiseptic; the latter will die notwithstanding every precaution. When these points are overlooked, forgotten, disremembered, then you will see how our statistics do not tell the truth. The second point was in regard to alcohol. He had used it quite often. It is excellent in external wounds, and he was not sure but that he had experienced quite as good results from it as has been reported of naphthalin. It is one of the original antiseptics.

DR. SQUIBB spoke in relation to naphthalin and inhalation. He did not know much about naphthalin except that it was one of the products of the coal tar series, the same as carbolic acid, and similar results may be expected from it. It is one of the ingredi-

ents of impure carbolic acid; and it has been abundantly shown that these substances are better disinfectants than the pure acid.

One of the defects of ether inhalation is that it is not rapid enough. Chloroform is very much more rapid in its operation. Ether, in order to be made to compete with chloroform, must be used in such a way as to get a very rapid effect. That rapidity of effect is obtained by causing as much of the ether to operate upon the lungs as is possible, and, therefore, the breathing of air over and over again, that is highly charged with ether, had been resorted to by some of the "inhalers," his own among the number. Dr. Skene was perfectly safe in his statement that re-breathed air would cause headaches; but he would be inclined to maintain that it is, while under ordinary circumstances, injurious, not as injurious, and would not produce headaches, etc., to the same extent when mixed with ether vapor. Ether vapor is, to a certain extent, stimulating, and in that sense it would overcome the effects of re-breathed air. Re-breathed air is re-breathed carbonic acid—that is to say, it consists largely of carbonic acid, and it therefore helps the anæsthetic effects of ether. That ether vapor breathed out of a pack, and breathed over and over again, is a very good way of producing rapid anæsthesia, cannot be doubted at this day; and when you expire ether after the manner of Dr. Skene's apparatus you lose a great deal of the ether. The breath which is expired contains nearly as much ether as the breath that is inspired, and therefore you are losing, with the expired air, a larger proportion of ether vapor. He thought with the ordinary pack, managed in the ordinary way, anæsthesia could be produced in perhaps the average number of cases in about half the time that it can when the air is expired; and fresh air is, at every inspiration, inspired. Some persons are anæsthetized more readily than are others, and much more ether is used by some operators than by others. He had known one instance where a pound and one half of ether was used in producing the required effect. He thought that with the wetted ether pack anæsthesia could be performed with a small quantity. An ounce and one-half ought to place the patient in a condition of complete anæsthesia. Dr. Skene did not say how much ether he used in his apparatus. The doctor concluded his remarks by alluding to the danger from the mixing of ether vapor with the air in apartments adjoining the operating room and in the operating room itself. He had often wondered at the freedom from accidents when a lighted candle, for instance, was brought in contact with etherized atmosphere. The danger is produced by the waste of the ether.

DR. THALLON, in answer to a question as to what proportion the apparatus of Dr. Skene *economized* ether, said he had not really measured the quantity or experimented upon the exact quantity used. With regard to the rapidity of the induction of anæsthesia, he had tried the doctor's (Squibb's) apparatus a great many times, and also Dr. Hutchinson's modified apparatus, and he had never been able to induce anæsthesia in anything like the shortness of time that he had done with the apparatus of Dr. Skene. In the last eight cases, the average time from the first inhalation to the period of complete surgical anæsthesia was four minutes, and in one case the time was one minute and one-half. The doctor thought that the rapidity with which anæsthesia is induced depends not upon the amount of ether taken into the lungs, but upon the amount taken into or absorbed in the blood. The amount of any gas absorbed follows the laws of partial pressure. If a patient is allowed to inhale an atmosphere of almost pure ether vapor, he will absorb that a great deal quicker than if he is allowed to inhale an atmosphere composed partly of ether vapor, partly of oxygen and partly of carbolic acid. That is the very advantage that Dr. Skene pointed out—that you can regulate the amount of air and ether, so that you can give the patient anything, from pure ether down to pure air.

DR. G. R. FOWLER said his experience had been chiefly with the Allison apparatus. He thought it economized ether. He had frequently completed an operation lasting from one-half to three-quarters of an hour, with from two to five ounces of ether. He at one time devised an apparatus by which the expired air could be thrown out through one orifice and the ether vapor could be inhaled through another. He found, however, that there was no particular advantage, so far as rapidity of producing anæsthesia was concerned. It possibly economized ether, but patients struggled just as much and seemed to be just as uncomfortable when being anæsthetized by Allison's apparatus, as by any other. He had had no experience with Dr. Squibb's inhaler. His own experience had been confined to Allison's inhaler, and he had been entirely satisfied with it.

DR. JEWETT asked Dr. Fowler in reference to the production of pain by naphthalin. He had occasion to use it in packing the vagina, in some half-dozen cases, and in two or three cases it seemed to produce pain and discomfort from "smarting." It occurred to him that some difficulty might occur in applying it to fresh wounds.

DR. FOWLER had applied it to chronic ulcers of the leg, and perhaps they are as sensitive to irritation as most wounds are, and of course there would naturally be some slight irritation produced by this agent. He had used it some in the opening of abscesses, and there had not been any pain to complain of. He had used it in one case of sloughing of the walls of the vagina following delivery. He applied it freely, and packed it in with absorbent cotton. The discharge, from being septic, became aseptic, and the patient complained of no pain. There has been some objection raised to it on account of producing pain. Some think it irritates the granulations, and increases the discharge from the granulated surfaces, and that there is in some cases even hemorrhage. Perhaps these results do occur, but he had never seen them. He had more recently used a perforated silk protective in using naphthalin as a dressing, because he found that in case of old ulcerations, he had obtained a more equal distribution of pressure of the bandage. Of course, as agents become fashionable, they are very much more extensively used. Perhaps the older practitioners remember that when tenotomy was first brought before the profession, almost every patient was tenotomized. The fever ran over the country. Perhaps it is the same in this case. He had carefully inquired of patients in his dispensary practice as to the amount of pain experienced, and it does not seem to be a prominent symptom, any more than in the case of any other antiseptic, iodoform excepted.

DR. DE BOWES referred to the virtues of common salt and borax with oil, as efficient antiseptics. He thought they were equal to many of more modern date.

MINUTES OF THE MEDICAL SOCIETY OF THE COUNTY OF KINGS.

A stated meeting of the Medical Society of the County of Kings was held Tuesday, December 19, 1882; the President, Dr. Jewett, in the chair, and about eighty members present. The minutes of the previous meeting were read and approved.

The following proposals for membership were made: By Dr. Arnold Stub, Hugo Doergens, M.D., No 227 Clinton St.; by Dr. F. H. Stuart, Wm. M. Hutchinson, M.D., No. 311 Hicks St., and by Dr. McNoughton, Norris M. Carter, M.D., 499 Washington Av.

THE COUNCIL reported acceptance to membership of L. De B. Kuhn, M.D., Univ. Pa., 1854; S. H. Benton, M.D., Bell. H. M. C., 1879; and James C. Kennedy, M.D., Bell. H. M. C., 1882.

The report of the Committee on Surgery was made as follows: By Dr. J. S. Wight: I. Amputation at the Knee-Joint; II. Some Points in the Reduction of Hernia; by Dr. A. J. C. Skene, Essentials of Success in Ovariectomy; and by Dr. G. R. Fowler, Naphthalin as a Wound Dressing.

Those who took part in the discussion were Drs. Reese, Wight, Squibb, Thallon, Fowler, Jewett and De Bowes.

The following nominations were made: For President, Drs. B. A. Segur, Arthur Mathewson and Geo. G. Hopkins; for Vice-President, Drs. F. H. Colton, Isaac H. Barber, and John N. Freeman; for Secretary, Dr. R. M. Wyckoff; for Assistant Secretary, Drs. W. G. Russell, E. H. Squibb, and J. B. Mattison; for Treasurer, Dr. J. R. Vanderveer; for Librarian, Dr. T. R. French; for Censors, Drs. J. S. Wight, W. G. Russell, B. F. Westbrook, A. Ross Matheson, Ernest Palmer, G. R. Fowler, F. H. Colton, E. Reynolds, William Wallace, G. W. Baker, Alex. Hutchins, C. Jewett, G. Wieber. To fill two vacancies in the delegation to the State Medical Society, for 1883: Drs. L. S. Pilcher, E. N. Chapman, William Wallace, and J. R. Vanderveer. The matter of nomination of delegates to the National Association was referred to the Council.

THE COUNCIL was instructed to prepare a ballot to be voted upon at the annual meeting of the Society.

THE CHAIR announced the death of Dr. D. A. Dodge. On motion, the President was empowered to appoint a memorial committee.

On motion, a committee of two, consisting of Drs. Hopkins and Wyckoff, was appointed to revise the "fee bill" of the Society.

The following named gentlemen were declared elected members of this Society, namely: Drs. G. H. Knight, John Bowen, and W. A. Northridge.

On motion, the Society adjourned.

R. M. WYCKOFF, M.D., *Secretary*.

Ἀσκληπιὸς



ὁ Σωτήρ

Χάρμα μέγ' ἀνθρωποῖσι, κακῶν θελκτῆρ' ὀδυνῶν.

Hymns of Homer, No. XVI.

PROLIFERATIONS.

—THE DELEGATION to the State Medical Society, now serving from this Society, has three years to run, namely, 1883, 1884 and 1885. The next regular election of delegates should take place at the annual meeting in January, 1886, and those who are then elected will be entitled to attend the State Society's convention in February, 1886, and three years thereafter.

—SPINA BIFIDA.—Dr. Horton states that the tumor of the spina bifida case, reported in the September PROCEEDINGS, has wholly disappeared. The paralysis of the lower extremities remains. The treatment by injection of the sac with solution of iodine and iodide of potassium was continued.

—AGUSTIN M. FERNANDEZ, M.D., member of this Society, has been appointed associate editor and correspondent in the United States of the *Cronica Medico Quirurgica* of Havana, Cuba, in the place of Dr. A. B. De Luna, of New York City.

—DANIEL ALBERT DODGE, M.D., died in Brooklyn, N. Y., December 12, aged fifty-three years, from cerebral embolism, supervening upon chronic valvular disease of the heart. Dr. Dodge was a graduate from the College of Physicians and Surgeons, New York, in 1852, about which date he settled in practice in Brooklyn. He was for a long term of years attached to the surgical service of the Long Island College Hospital, of which he was a visiting surgeon at the time of his demise. He had been a member of this Society since 1862.

—PASTEUR'S GREAT DISCOVERY.—Every medical man will be deeply interested by the late revelations growing out of Pasteur's labors in the vaccination of chicken cholera. In a word, the grand fact is, that the virus is attenuated by simple atmospheric exposure. The parasite can be cultivated only in the absence of air—hence the name *aerobies* given to these bodies by Pasteur. The real cause for this antagonism of air to parasite is held by him to be the oxygen of the air. His deduction from this is that in this latter element is found a natural force, everywhere present, that may exert the same antagonism to the virus of other diseases. "The widest generalization should be made at once of this method of enfeebling their virulence. It derives its virtue, so to speak, from the cosmic order of things." As regards vaccine virus, the enfeebling influence of atmosphere has long been known. Those only have succeeded in the trans-exportation of lymph who have exercised the greatest ingenuity in the exclusion of it from the action of the air.—*Cincinnati Lancet and Clinic*, Dec. 11.

—THE BROOKLYN PATHOLOGICAL SOCIETY meets at 8.15 P. M., on the second and fourth Thursdays of the month, at the new Eye and Ear Hospital on Livingston Street.

The meetings are open to all members of the County Society.

—THE DIGESTIBILITY OF OYSTERS.—Why oysters should be eaten raw is explained by Dr. William Roberts in his lecture on “Digestion.” He says that the general practice of eating the oyster raw is evidence that the popular judgment upon matters of diet is usually trustworthy. The fawn colored mass, which is the delicious portion of the fish, is its liver, and is simply a mass of glycogen. Associated with the glycogen, but withheld from actual contact with it during life, is its appropriate digestive ferment—the hepatic diastase. The mere crushing of the oyster between the teeth brings these two bodies together, and the glycogen is at once digested without any other help than the diastase. The raw, or merely warmed, oyster is self-digestive. But the advantage of this provision is wholly lost by cooking; for the heat immediately destroys the associated ferment, and a cooked oyster has to be digested, like any other food, by the eater’s own digestive powers.

“My dear sir, do you want to ruin your digestion?” asked Professor Houghton, of Trinity College, one day of a friend who had ordered brandy and water with his oysters in a Dublin restaurant.

Then he sent for a glass of brandy and a glass of Guinness’s XX, and put an oyster in each. In a very short time there lay in the bottom of the glass of brandy a tough, leathery substance resembling the finger of a kid glove, while in the porter there was hardly a trace of the oyster to be found.

—POISONING FROM RED STOCKINGS.—Dr. J. Woodland writes to the *Lancet* that, having had his attention directed to several cases of great irritation of the feet and legs, causing small pustules to arise and the skin to subsequently exfoliate, and suspicion being fastened upon red stockings which the patients wore, he carefully analyzed them. He found a tin salt which is used as a mordant in fixing the dye. He succeeded in obtaining as much as 22.3 grains of this metal in the form of the dioxide, and as each time the articles are washed the tin salt is rendered more easily soluble, the acid excretions from the feet attack the tin oxide, thus forming an irritating fluid.


—ANÆSTHETIC PROPERTIES OF CARBONIC ACID.—Dr. Brown-Séquard has recently (*Nature*, p. 557) made the interesting discovery that in certain animals complete local anæsthesia of the larynx, accompanied by incomplete general anæsthesia, may be obtained by directing on to the upper part of that organ a rapid current of carbonic acid during a period of fifteen seconds to two or three minutes. The anæsthesia lasts from two to eight minutes after stopping the current. Dr. Séquard proposes to experiment on the human subject by introducing carbonic acid through the mouth or nostrils. This singular action of the acid may, perhaps, throw some light on the sedative action of ærated waters in vomiting and nausea.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

62D ANNUAL MEETING, JANUARY 18TH, 1883.

LIST OF NOMINATIONS FOR OFFICERS AND DELEGATES.

By-Laws, Chap. I., Art. 5.—Nominations for Officers and Delegates shall be made at the December meeting. The Secretary shall have the names of all nominees printed on slips of paper, two of which shall be sent to each active member.

 In voting use the slip as a BALLOT, after having drawn a line through the names of those nominees for whom you do NOT wish to vote.

FOR PRESIDENT.

Dr. G. G. HOPKINS,

Dr. A. MATHEWSON,

Dr. A. SEGUR.

FOR VICE-PRESIDENT.

Dr. I. H. BARBER,

Dr. F. H. COLTON,

Dr. J. N. FREEMAN.

FOR SECRETARY.

Dr. R. W. WYCKOFF.

FOR ASSISTANT SECRETARY.*

Dr. J. B. MATTISON,

Dr. E. H. SQUIBB.

FOR TREASURER.

Dr. J. R. VANDERVEER.

FOR LIBRARIAN.

Dr. T. R. FRENCH.

FOR CENSORS [five in number].*

Dr. G. W. BAKER,

Dr. A. R. MATHESON,

Dr. W. WALLACE,

" F. H. COLTON,

" E. PALMER,

" B. F. WESTBROOK,

" G. R. FOWLER,

" E. REYNOLDS,

" G. WIEBER,

" A. HUTCHINS,

" J. D. RUSHMORE,

" J. S. WIGHT.

Dr. C. JEWETT.

FOR DELEGATES TO THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

(TO FILL TWO VACANCIES.)

Dr. E. N. CHAPMAN,

Dr. L. S. PILCHER,

Dr. J. R. VANDERVEER

Dr. W. WALLACE.

The President requests the following members to act as TELLERS:

Dr. PAINE,

Dr. H. F. WILLIAMS,

Dr. DE LA VERGNE,

" EMERY,

" McNAUGHTON,

" SCRIMGEOUR,

" J. C. SCHAPPS.

* Dr. G. W. Russell has requested in writing to have his name removed from the ballot as nominated as Assistant Secretary and Censor.

—THE REGULAR MONTHLY MEETINGS of the Medical Society of the County of Kings are held at 8 P. M. on the third Tuesday of each month, at Everett Hall, 398 Fulton Street.

The January meeting will be held on the 16th. The papers will be as follows: The Antiseptic Value of Resorcine, by Dr. N. B. Sizer, for the Committee on Hygiene.

Election of officers for 1883.

Reports of officers and committees of the Society.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

OFFICERS AND COMMITTEES FOR 1882.

<i>President</i>	C. JEWETT, M.D., 307 Gates Ave.
<i>Vice-President</i>	G. G. HOPKINS, M.D., 375 Grand Ave.
<i>Secretary</i>	R. M. WYCKOFF, M.D., 532 Clinton Ave.
<i>Assistant-Secretary</i>	W. G. RUSSELL, M.D., 165 So. 9th St., E. D.
<i>Treasurer</i>	J. R. VANDERVEER, M.D., 301 Carlton Ave.
<i>Librarian</i>	T. R. FRENCH, M.D., 469 Clinton Ave.

CENSORS.

B. A. Segur, M.D., 281 Henry St.	B. F. Westbrook, M.D., 174 Clinton St.
A. Hutchins, M.D., 796 De Kalb Ave.	A. R. Paine, M.D., 485 Clinton Ave.
J. D. Rushmore, M.D., 129 Montague St.	

DELEGATES TO THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

(1882 to 1885.)

Drs. J. C. Shaw, C. Jewett, T. R. French,	Drs. G. G. Hopkins, J. A. McCorkle, S. Sherwell, J. H. Hunt.	Drs. J. Byrne, B. F. Westbrook, G. W. Baker,
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Chap. XI., Art. 2, of By-laws: "Any Member elected as Delegate to the Medical Society of the State of New York, who shall be unable to attend as Delegate during two successive years, shall be considered to have vacated his position as Delegate."

COMMITTEES OF THE SOCIETY.

HYGIENE.

Drs. B. F. Westbrook,	N. B. Sizer,	D. E. Chace.
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THERAPEUTICS AND CLINICAL MEDICINE.

Drs. J. A. McCorkle,	A. Hutchins,	E. H. Bartley,	A. R. Paine,	A. R. Matheson.
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OBSTETRICS.

Drs. J. R. Vanderveer,	A. S. Clarke,	E. Palmer,	W. Wallace,	B. A. Segur.
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SURGERY.

Drs. A. J. C. Skene,	J. S. Wight,	G. R. Fowler,	J. D. Rushmore,	P. L. Schenck.
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REGISTRATION.

Drs. J. A. Jenkins, A. S. Clarke,	Drs. W. G. Russell, Z. T. Emery,	Drs. F. W. Rockwell, A. Haslett.
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PHYSICIANS' MUTUAL AID ASSOCIATION.

Drs. W. W. Reese, N. W. Leighton,	B. A. Segur, A. L. Bartlett,	A. Hutchins, S. H. Olmstead,	J. A. Jenkins, A. W. Catlin.	R. M. Buell,
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PROCEEDINGS
OF THE
MEDICAL SOCIETY OF THE COUNTY OF KINGS

VOL. VII.

FEBRUARY, 1883.

No. 12.

RESORCINE, ITS HISTORY AND ANTISEPTIC VALUE

BY N. B. SIZER, M. D.

About 1860, two Viennese chemists, Hlasiwetz and Barth, while experimenting with galbanum, discovered that if they fused this gum-resin with potassa, a new substance, belonging to the "aromatic series," could be extracted from the product of this fusion.

To this they gave the name "resorcine," from its analogy to "orcine," extracted from "archil" [*anchusa tinctoria*].*

Resorcine was later obtained from *assafoetida* and *ammoniacum*, as well as from the so-called "segapenum," the aqueous extract of "bois de sepan," and from other analogous substances by fusion with potassa, as already described. It has also been found in the mother-liquor † arising during the manufacture of "bresiline" by distillation.

Some years later, Kœrner was able to produce resorcine synthetically ‡ by melting para-iodo-phenol, derived from di-nitro-benzol,

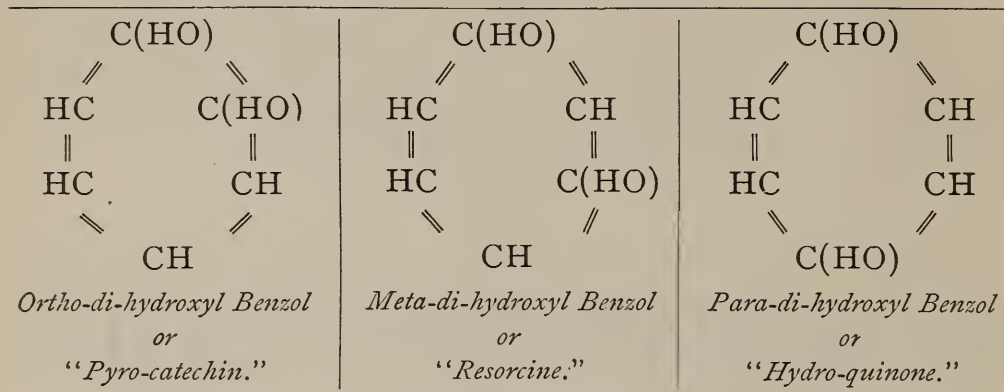
* See Wurtz, "Dict. de chimie," sub voce.

† "Bull. de Société de Chimie," Paris, 1873. Vol. 15, p. 210.

‡ "Bull. de Soc. de Chimie," 1867. Vol. 7, p. 261.

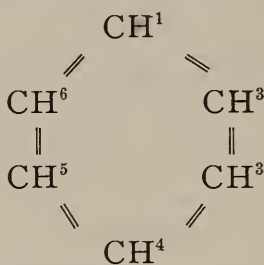
with potassa ; following him, Oppenheim, and Vogt* prepared it by using chlor-oxy-phenylic sulphuric acid.

Chemically considered, resorcine is "meta-di-hydroxyl-benzol, pyro-catechin being the "ortho," and hydro-quinone the "para"-compound. These substances may be graphically represented by the accompanying diagrams.



It may be as well to say, for those who are not entirely *au courant* with modern chemistry, that the relationship between these three chemicals is very intimate, and may thus be explained :

Benzol is a compound made up of C_6H_6 , and each molecule can be supposed to have the atoms of C and H so arranged that the group CH is repeated six several times, each group CH being bound to its preceding by two bonds, to its succeeding group by one bond only, as here shown, which represents the ideal benzol molecule, the figures being added only to designate the different groups.

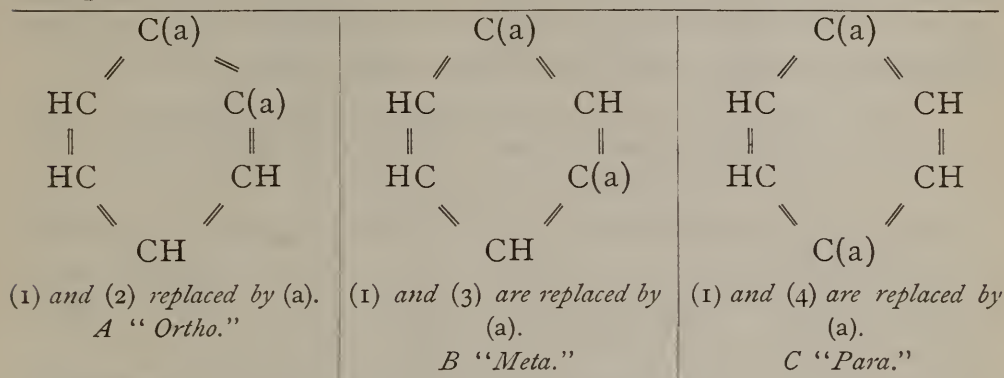


We find that, in such a case as this, each atom of H in this molecule may be replaced by a monatomic atom, or compound radical, and that more than one of these atoms can be thus substituted at one time.

If, in the diagram, we represent the monatomic radical, which we here insert, by (a) and replace two of the H atoms by (a), beginning

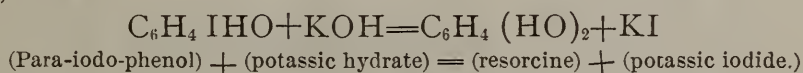
* "Bull., etc.," for 1868. Vol. 10, p. 225. "Ann. de Ch. et. Pharm.," 130-154 ; 138-76; "Comptes Rendus," 63-564.

at (1) and passing around by the right, we then have the following changes:



In [A] we have the H atom taken out of (1) and (2), and replaced by our hypothetical monatomic radical (a), in [B] (1) and (3) are replaced, and in [C] (1) and (4) are replaced, the other groups being as before ; A, B, and C, are specially named, as we shall see. When two successive groups have their hydrogen atoms replaced by (a), it is known as an "ortho" series ; when a group contains an intact atom of H, between two replaced H atoms, we have the "meta" series ; while in the third form, called the "para" series, two H atoms are left intact between two replaced H atoms. Applying our knowledge to the "resorcine" compound, we find that pyro-catechin resorcine and hydro-quinone are isomeric, each being made up of $C_6H_4 [HO]_2$, yet very different, one from the other, because pyro-catechin is benzol with groups (1) and (2) altered so that the H atom in each has been replaced by (HO). Resorcine has groups (1) and (3) thus altered, while hydro-quinone has the H atoms in groups (1) and (4) replaced by (HO). Thus each is a modified benzol, with a slight re-arrangement of the atoms.

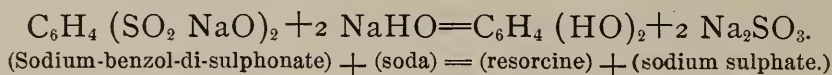
It might be imagined that benzol would be a good substance to use in manufacturing resorcine, but, as a matter of fact, it is not, the use of phenol being preferred, which is merely benzol with H atom (1) replaced by [H O]; the best form seems to be para-iodo-phenol, thus :



This process is rather wasteful of iodine, and it seems, therefore, preferable to convert the phenol into* phenol-sulphonic-acid, whose salts, fused with caustic alkalies, yield resorcine. Bertsch conducts the vapor of pure benzol into sulphuric acid, heated up

* "New Remedies," 1880, pp. 269, 270.

to at least 240°C. At this temperature both benzol and acid are decomposed, and a new body makes its appearance, benzol-di-sulphonic acid $[C_6H_4(SO_2HO)_2]$, which is neutralized with soda and melted with a caustic alkali, in this case sodic hydrate, thus:



PROPERTIES OF RESORCINE.

Three varieties of the drug are found in commerce, apparently varying only in purity.

"Commercial" resorcine is an impure product, dangerous for experimentation, and of uncertain strength and action.

It is found in crystals, large in size and of a garnet color, usually smelling strongly of phenol.

"Crystallized" resorcine occurs as prismatic needles, slightly turning a pale rosy tint, by exposure to air and light, and is evidently less impure than the former quality.

"Resorcine C. P." for medicinal use, may be obtained by* Monnet's process, of fusing sodium-phenylene-di-sulphite with potassa, extracting the resorcine by ether, evaporate, sublime residuum, and wash the crystals with pure benzine. The result is a crystalline body, made up of fine needles, of a pure white color, unchanged by exposure to the air, and possessing a faint aromatic odor.

Dujardin-Beaumetz speaks well of a specimen from Hoffmann and Schoetensack, of Ludwigs-hafen-am-Rhein, as being apparently pure, but changing color on exposure to air.

Resorcine crystalizes in long needles, forming right rhombic prisms, united to form a beautiful arborescence, but sometimes they are found united edge to edge, so as to form aggregations of small tablets.

The pure crystals do not appear to change color in air.

Andeer [op. cit. infra] has noticed that if we rub or strike the crystals in the dark, marked phosphorescence is produced, if the crystals are thoroughly dry.

Pure resorcine possesses a very feeble odor somewhat like that of benzoic acid; its taste is sweetish, then slightly bitter and aromatic, leaving, like nitre, a cool sensation in the mouth. Its solubility is great; 100 parts of water dissolve about† 86.4 parts of resorcine at 0°C., or about‡ 95 parts at the same point, according to others.

* "Bull. de Therap.," July 15, '81. Vol. 101, p. 5.

† Calderon.

‡ Dujardin-Beaumetz.

All liquids seem to be solvents of resorcine, except chloroform and carbon di-sulphide. It fuses at* 99°C. [†118°C.; ‡104°C.], boils at 270° to 276° C. and sublimes, unchanged, at 300° C.

Like many other soluble substances it lowers the temperature of the water in which it is dissolved.

Its aqueous solution, when exposed to air and light, quickly, but gradually, assumes a brownish color, varying in intensity directly as the concentration, but its qualities are unaltered. The solution is neutral and takes a dark violet tint with ferric chloride and chloride of lime. Lead acetate gives a *white* precipitate with pyro-catechin, but *none* with resorcine, its isomer, which latter drug is again exceptional in reducing ammonio-nitrate of silver. A solution of resorcine boiled in contact with manganese-di-oxide and sulphuric acid gives off no odor of quinone; on the contrary, hydro-quinone, its isomer, sets abundance of quinone free under these circumstances.

A beautiful test for resorcine is to heat a small quantity with phthalic acid for half an hour up to 200° C. On adding ammonia, Fluoresceine will be produced, and by then adding bromine water, || Eosine will appear, the well-known beautiful dye.

Liebermann's test for resorcine is useful, and consists of the addition of nitrous acid, which produces a series of beautiful reds and blues. Resorcine firmly coagulates both egg and serum albumin, and the coagulum gives off the vapor of ammonia on heating to about 122°C.; at 170°C. a sky-blue substance is deposited on the inner walls of the vessel employed; this is the semi-resinous "resorcine-blue," soluble in water and alcohol. It may also be formed by heating resorcine with urea, but care must be taken with the heat as the color is destroyed above 170°C. An aqueous solution of resorcine, to which sulphate of sodium has been added, is colored a dark ¶ garnet by perchloride of iron.

When ammonia is added to an aqueous solution of resorcine, it becomes greenish-black after some hours, and after a few days, as the free ammonia disappears, the color changes to a very dark violet. Ether will then dissolve out a beautiful blue pigment, the aqueous solution still remaining dark green.

* Hlasiwetz.

† Calderon.

‡ Oppenheim and Vogt.

§ See "Jour. Chem et Pharm.," 4me series, 1877. Vol. 25, p. 519.

|| Gauthier and Wagner. "Chim. Indust.," 1879.

¶ Andeer; "Einleitend. studien ü. d. R. zur Einführung in d. Prakt. Med." Inaug. diss. Würzburg a. M. 1880.

The ethereal solution, decanted and evaporated, leaves a crystalline mass, made up of extremely fine needles, arranged in radiating forms, bluish or sometimes colorless.

Fuming sulphuric acid gives a yellow orange color with resorcine, gradually passing to garnet. Some of these colors, notably "fluoresceine" and "eosine" rival the familiar aniline series in brilliancy and beauty.

The "resorcine-blue," already mentioned, has been considered very analogous to, if not identical with, the well known "indigo-blue;" but Andeer finds reason to class it with those coloring matters, appearing sometimes in urine during certain pathological conditions, such as peritonitis, cholera, typhus, etc. Besides, "resorcine-blue" appears to * differ from "indigo-blue" in its amorphous condition, and its solubility in water and alcohol. Resorcine furnishes us many compounds by combination with chlorine, bromine, nitric and nitrous acid, etc.

EFFECTS OF RESORCINE ON LOW ORGANISMS.

The phenomena of fermentation, well studied as they have been, are still somewhat uncertain, for our latest authorities exhibit considerable divergence. [For an excellent summary, see De Lanessan, "Histoire Naturelle Medicale," 2me partie, p. 1283 et seq. and p. 1317 et seq. Paris, 1880.]

Some base their theories on the influence of germs, which, by disaggregating the fluid in which they live, as they grow, cause the series of phenomena known as "fermentation"; other writers consider that certain excrementitious products of these lower organisms bring about the decomposition of fermentable material, while others consider the presence of these microphytes as more accidental than essential.

However this may be theoretically, it appears safe to assume that, in some way, the presence of these micro-germs is essential to, at least, the *beginning* of fermentation.

Resorcine has been found to arrest the progress, and prevent the initiation, of fermentation; although its *modus operandi* is yet obscure its powerful action is well † proven.

* Birnbaum; "Bull. Soc. Chem. German." Sept.-Oct., 1880.

† Andeer, op. cit.; Brieger "Archiv. f. anat. u. Phys." von His., etc. Leipsic, 1879. Vol. suppl. p. 61. Callias "De la R. et de son emploi en Therapeutique." these de Paris, 1881. Dujardin-Beaumetz "Bull. de Therap." Vol. 101, p. 3, et seq.

ITS EFFECT UPON THE ALCOHOLIC AND LACTIC FERMENTATION.

Dujardin-Beaumetz's experiments were in a laboratory constantly warmed and exposed to contamination with "hospital air," conditions very favorable to the appearance of all fermentative and putrefactive changes. Thus the power of resorcine was very severely tested, especially in preventing the onset of fermentation.

His experiments demonstrate that resorcine is capable, not only of preventing the development of these "ferments," or to arrest it if already begun; but, in those cases where "ferments" have a definite form and reproduce themselves by germination or endogenous proliferation, it can totally destroy this reproductive power, when used even in small or medium quantities. Taking that most fermentable substance, unstrained honey, suitably dissolved in water, and placed in wide-mouthed bottles of a capacity of about 100 ccm., we shall find it, when exposed to air, light, and at a temperature of 15° to 20° C., to be actively fermenting from the third day, the glucose rapidly splitting up into alcohol and carbonic acid. A drop of the fluid will be found to swarm with the familiar "saccharo-mycetes," so often seen in diabetic urine.

About the fifth day, our specimen begins to develop an acid reaction, the alcohol disappearing and giving place to acetic acid. If we prepare such a solution by adding to each 100 ccm. 20 centigrammes of resorcine, that is, $\frac{1}{5}$ of one per cent., we shall find that the effect is to merely put off the alcoholic fermentation to about the sixth day; but, once commenced, it goes on as usual, the small quantity of resorcine having been, in some way, decomposed or transformed.

This may be proven by testing the fermenting solution with the per-chloride of iron, which gives us, in the presence of resorcine, a violet tint; but after the acetous fermentation has been completed, only a brownish discoloration appears, when we use the test.

Taking again 100 ccm. of our honey solution, we dissolve one gramme of resorcine in it, and shall find, even after forty or fifty days that the solution is still transparent, no fermentation having taken place, as the saccharo-mycetes are totally absent and resorcine is present in the fluid by test. We thus learn that one per cent. of resorcine will prevent the alcoholic fermentation.

Brieger,* Dujardin-Beaumetz and Andeer find a stronger solution at times necessary; but, as Andeer used resorcine prepared from an

* Locis citatis.

inferior commercial sample, and his physiological results sensibly vary from those of other experimenters, it is possible that his drug was sufficiently impure to require a larger dose to produce a similar effect.

Unboiled milk ferments very readily, and will show the presence of lactic acid and the characteristic oval cells of the ferment, usually after the second day.

If the specimen contains 20 centigrammes of resorcine to the 100 ccm. ($\frac{1}{5}$ of 1 per cent.), the fermentation is unaffected; a 1 per cent. solution shows no cells before the fifth day, when a thick layer of mold forms on the surface and rapid coagulation ensues. By the eighth day the milk is entirely coagulated and the resorcine has disappeared, but if the drug be present in quantity over 1 per cent., a sensible effect is produced, as this quantity seems to prevent* the growth of the fungus, when spores are sowed in the liquid.

Specimens containing 2 to 5 per cent. of resorcine will continue in good condition, even up to the sixtieth day, being free from microscopic cells even.

As a preservative for anatomical specimens, this drug is highly approved by European experimenters, who find that even pieces of spleen and pancreas, from typhoid cases, are very well preserved by a 1 per cent. solution, and indefinitely, as far as we know, in a 2 per cent. solution.

If we put small fragments of these organs in water only, they will putrefy with extreme rapidity; at the end of the fourth day putrefaction is complete, the odor is insupportable, and the fluid teeming with bacteria. If now we add to such a liquid about $1\frac{1}{2}$ per cent. of resorcine, the odor soon lessens, the micro-spores are less active, finally die, and after a few days disappear.

These tissues in a $\frac{1}{2}$ per cent. solution putrefy very slowly, with plenty of bacteria, but no odor, and when putrefaction is thoroughly established, we ascertain that the resorcine has disappeared *in toto*.

Portions of brain, or of other putrescible tissues, dipped in a 10 per cent. solution for four or five days, and allowed to dry in the open air, will gradually desiccate without any putrefactive change.

As regards urine, my experiments show that $\frac{1}{2}$ per cent. of resorcine will put off the ammonical fermentation to the fourteenth or fifteenth day, and, even then, so slowly as to be scarcely perceptible; if we add 1 per cent. of resorcine, fermentation will be completely prevented.

* Callias, op. cit., p. 24.

* Platt has recently found, that $\frac{1}{4}$ of 1 per cent. has no effect upon the bacteria of urine, while $\frac{1}{2}$ of one per cent. keeps the urine free from bacteria for twenty-four hours; $\frac{3}{4}$ of 1 per cent. keeps the bacteria away for four days, while some urine, *without* any addition, developed bacteria in eighteen hours. The difference in our results may be due to a difference in the drug. Dr. Pratt also quotes the price of the drug at about \$2.50 per ounce in this country, and half that in *Germany*. He will perhaps be surprised to learn that the finest quality, that made by Frommsdorff, of Erfurt, can be had, in any quantity, by physicians at only 90 cents per ounce in New York, as I am informed by my friend, Mr. A. C. Dung, of New York, a specimen of which I have much pleasure in showing you.

The following questions now require reply, viz.:

What is the action of R. on animals?

What is its *toxic* dose?

What relation is there between the size of the dose, and its effect?

Do these relations remain the same for all classes of animals, and all weights also?

Can we foretell the fatal dose for *any* animal, if we know its species and its weight?

PHENOMENA CONCERNING THE NERVOUS SYSTEM.

There is reason to believe that this drug always acts, primarily, through the nervous system, and not by conveyance to any part, through the blood. Very small doses seem to have no effect, but a dose equal to 30 centigrammes per kilo. of animal weight causes the phenomena to appear.

The animal becomes restless, then stands still, and begins shivering, until a generalized trembling prevails; all the muscles show more or less intense fibrillary contraction, heard through the stethoscope applied over any muscle, as an intense and continued noise, very like the cardiac "frémissement cataire."

Some moments later, clonic epileptiform convulsions appear, principally in the limbs, but seen also in the trunk and face if carefully watched, although not very marked if the dose has not been lethal.

The convulsions are often very like those produced by the faradic current, and follow each other at short intervals, occupying all muscles in turn. Short and slight at first, they soon gain force and

* Am. Jour. Med. Sci., January, 1883, p. 89.

length, until at the maximum they may last some minutes, fading away by degrees.

These phenomena last perhaps two hours at most, as we might expect from the solubility of the drug, and from its supposed rapid absorption and elimination.

If we cut through the sciatic nerve of a frog, at its exit from the pelvis, we shall find, that if we poison him with resorcine, all his body, except the injured limb, will be convulsed, although the drug has free access to the muscles of the limb through the circulation still unimpeded, showing that the drug acts through the nerve centres, and not through the blood upon the muscle contractility or the peripheral nerve terminations.

Paresis may show itself from too long continued or uninterrupted excitation, but even with excessive doses, death follows without *complete* paralysis.

Reflex excitability is weakened, but not lost; and there is reason to believe that the conductibility of nerve tissue is not seriously injured, as movements follow irritation of the peripheral end of a nerve.

General sensibility is impaired, only when the dose is lethal, and then only in the last moments of life. The animal is conscious, has vertiginous symptoms, walking about quite easily, if dose be not too large.

I find the minimum fatal dose to be rated at about 60 centigrammes per kilo. of body weight.

This drug, then, appears to act upon the motor tracts of the cord, otherwise, the phenomena being due to some permanent alteration of the blood, (as has been alleged of Phenol), we ought to be able to find some alteration of the blood cells. This has been repeatedly sought for, and as repeatedly* never found.

As to any chemical change in the blood, that remains to be proven; it *appears* normal, coagulates as usual. Venous blood exposed to the air rapidly becomes a brilliant red in color, which certainly could not occur if the cells had lost their power of absorbing oxygen.

It seems to be generally found that animals may be repeatedly experimented upon with moderate sized doses, even within a few months, without appearing perceptibly injured. Indeed, it seems only by want of care that the animals ever remained sometime ill;

* Dujardin-Beaumetz, Callias (op. cit.)

and there are still living, in perfect health, animals in whom these convulsive attacks have been *many times* induced.

This fact would seem to indicate that there is no tendency to an accumulation of the drug in the system ; but, on the contrary, that it is very rapidly eliminated.

Tetaniform convulsions are very rare and true tetanus* never appears.

When a rapidly fatal dose is given, say 90 centigrammes to 1 gramme per kilo., these convulsive phenomena appear, but very rapidly.

The animal has vertigo and falls on its side, the convulsions are very violent at first, but gradually become weaker and more infrequent, except in the thorax, neck and face. The eyes are motionless, the pupils dilated and insensitive to light, the general sensibility rapidly diminishes until the strongest stimuli fail. Hic-cough appears at frequent intervals, owing to the convulsive movements of the diaphragm. Respiration becomes jerky, scarcely perceptible, and at last ceases, after a few irregular spasms of the thoracic muscles. Death occurs in about thirty minutes after the advent of the toxic symptoms.

A fatal dose of resorcine seems, therefore, to act chiefly upon the superior segment of the spinal cord and upon the brain, being a powerful excito-motor, acting through the central nervous system.

CIRCULATION AND RESPIRATION.

A large, not fatal dose (and *a fortiori* a fatal dose), produces an acceleration of the respiratory movements, proportionate to the frequency and intensity of the convulsions.

The breathing is rapid and labored, and sometimes jerky, from the spasms of the respiratory muscles. Soon the respiration becomes shallow, still very rapid, and at last scarcely perceptible until its total cessation, a few beats of the heart only following.

The heart becomes accelerated, often too rapid to count. There is increase of the blood pressure and turgescence of the whole vascular system.

In the case of a frog, it is easy to study his inter-digital web, and we shall find that acceleration begins soon after administration of the drug and continues till death, while in the case of mechanical irritation, as we know, the acceleration is reflex and momentary.

Respiration being primarily arrested, we naturally find rapid

* Dujardin-Beaumetz.

pulmonary engorgement, the right ventricle stopping in full diastole, as well as the auricle, while the left heart dies in systole, receiving no blood through the pulmonary veins. The causes of the rapid breathing may be provisionally suggested as—

(A) Reflex excitation, or (B) “*besoin de respirer*” from a desire to disembarass the lungs from blood, poisoned by carbonic anhydride accumulating through extreme body waste, due to hyper-activity of the muscles, or (C) direct action of the drug upon the respiratory centres.

The rapid heart beat and vascular turgescence have also been explained by this same hypothetical centric excitation.

Of course we may, as yet, be far from certain, but this theory seems confirmed by the extremely congested state of the nervous systemic centres, post mortem, which we can scarcely understand, except we admit the presence of a constant and intense irritation, which is not at all opposed to the other epi-phenomena.

As regards the other organs we have, of course, congested liver, kidneys, etc., part of whose hyperæmia may be explained by the local irritation set up through the presence of the drug in the organs and its elimination by them, being analogous in this respect to the “diphtheritic” and “scarlatinal” kidneys.

Dujardin-Beaumetz* seems once to have succeeded in producing hæmaturia by less than a fatal dose, and considers it due to the abdominal hyperæmia in the first place, and secondly, to the fact that this drug is largely eliminated by the kidneys, which are then submitted to a doubly intense irritation, both direct and indirect. Andeer, although observing the phenomenon several times, has sought † to attribute it to fortuitous and accidental causes erroneously, as it seems to me.

The muscular contractility does not appear to become impaired.

Immediately after death the muscles are relaxed and supple, rigor-mortis appearing in from 10 to 20 minutes.

This rapid accession of cadaveric rigidity is probably due to the large amount of excretory products which have accumulated in the muscles by their super-activity, the absorbents being overworked and having had no time to remove the waste material.

This muscular hyper-activity explains also the elevation of bodily heat to 40° ‡ 41°C. , which has been observed to persist even up to

* Op. cit., p. 17.

† Op. cit.

‡ 104° , 106°F.

the moment of death, unlike phenol, which produces considerable depression of temperature, reaching sometimes $30^{\circ}\text{C}.$ * at death.

A fatal dose of resorcine seems to have no effect upon the blood-cells, which have been examined innumerable times with negative results. If we add a 2 per cent. solution to a few drops of blood, we see the fibrine coagulate, ensnaring most of the cells in its meshes, but those which are free suffer no change of form for some time. In the case of the frog, the protoplasm seems to retract, and the nucleus and a few granules appear in the white cells.

In the case of warm blooded animals, the red cells shrink and seem to be surrounded by a sort of peripheral halo or "auréole," as Dujardin-Beaumetz phrases it, perhaps due to peripheral coagulation. Later, the cells disaggregate and dissolve. These changes are not due to resorcine alone, but often proceed from osmosis in presence of water only.

POST MORTEM CHANGES.

Nervous System.—Intense hyperæmia, especially in the upper part of medulla, and in the brain; veins turgescient. This corresponds to what we have already seen, that the convulsive attacks affect the thorax, neck and face, the hind legs being scarcely agitated.

Hæmorrhages into the nervous centres have not yet been observed as far as I know, notwithstanding the highly congested condition of those regions during life.

Lungs.—Always congested, sometimes like "splenization," but always permeable and float. No cases of inflamed lungs or pleura even after fatal doses.

Heart.—Very vascular, superficially. *Right* side soft, and full of dark clots. *Left*, contains a little red blood in auricle. Ventricle empty, firm and contracted.

Liver and Kidneys.—Very vascular. No fatty degeneration under microscope. Certain hæmorrhage on convexity have been † attributed to spasm of the diaphragm.

Stomach.—When drug has been given per orem, this viscus has thin, easily torn walls, and its mucosa is so soft that the epithelium peels off at a touch. In *one* case, the walls were much thicker than usual; no softening was present.

It has been suggested that this gastric softening may be similar to

* $86^{\circ}\text{F}.$

† Dujardin-Beaumetz, op. cit., p. 19.

the analogous condition which Schiff * attributed to a lesion of the "crura cerebri." The softening is alike in both cases, and the cerebral hyperæmiæ are similar.

Intestines.—Aside from general vascularity, these viscera seem normal. When resorcine has been administered by enema, the rectum may be whitish, opaque and slightly rugous internally, but all appearance of ulceration or eschar is totally absent. The drug may be used sub-cutaneously of a strength of two per cent. or less, without leaving any appreciable lesions, stronger solutions may be followed by local sloughing, but this is unusual.

ANTIDOTES OF RESORCINE.

There is doubtless a great analogy between the effects of resorcine and phenol upon the living animal, and this fact has been very useful in devising a proper antidote to the drug.

Baumann was among the first to notice † that the phenols combine with the sulphates to form in our bodies a phenyl-sulphuric-ether, far less poisonous than the original phenol. He has suggested the possibility of quickly decomposing the phenol by an alkaline sulphate and thus prevent or modify its poisonous effects.

So far as phenol is concerned, the results are favorable ; but we cannot use this plan for resorcine, as Salkowski, Sonnenburg and others, find that the free use of a sulphate will neither prevent nor delay the advent of toxæmia in animals poisoned by resorcine. This drug is eliminated almost entirely by the kidneys and rapidly, so that it may be detected in the urine very soon after administration.

Unfortunately, our re-agents are not very delicate or numerous, the per-chloride of iron being, so far, almost our only one, giving a violet color in presence of a certain quantity of the pure resorcine. Care must be used, as some other substances give us the same reaction. To bring out the iron test the urine must be neutral or alkaline. If albuminous or ammoniacal the color fails to appear, even when somewhat large quantities of the drug may be present. Diabetic urine, if not albuminous or ammoniacal, will give the proper reaction.

Neutral urine containing resorcine and treated by the per-chloride

* Duval "Physiologie," p. 283, 1879.

† Baumann "Ueber d. Arom. Ether. Schef. Säü." Arch. f. Anat. u. Phys., 1877, p. 334 ; 1878, pp. 576-578.

of iron, gives first an abundant whitish precipitate which re-dissolves and the violet color begins to appear.

Urine containing eliminated resorcine is often noticed to become more or less smoky in tint soon after evacuation, the tint assuming almost a black shade in fever patients who have been taking a small quantity medicinally. Hence, the blackening of the urine is *not* always a sign of the ingestion of a poisonous dose of the drug, as has been predicated of a similar symptom in the case of phenol.

Resorcine, when eliminated by the urine, will not respond always to the test, even when in comparatively large amount, and we suppose that the drug must undergo some change, while in the system, to account for this fact.

It has been suggested* that it becomes partly, at least, transformed into one of its isomers, hydro-quinone or pyro-catechin, or their derivatives, such as quinone, oxalic acid, et cetera.

ACTION OF THE DRUG UPON A HEALTHY MAN.

Andeer's† experiments go to show that in small doses no phenomena appear, but that after taking 10 grammes dissolved in 250 ccm. water, in divided doses in fifteen minutes, he felt dizzy, sight became impaired, hearing and smelling were almost abolished, and salivation was excessive. Sharp vertigo and fainting followed, and the bystanders said he had general clonic convulsions, tetaniform cramps of the nucha, and accelerated respiration, but no changes in temperature were noted. Andeer says, that in animals he has seen a fall to 30°‡ C. at death, but Dujardin-Beaumetz absolutely denies the accuracy of the observation.

After five hours all symptoms had passed away, leaving experimenter as well as ever.

Resorcine differs from phenol in acting quickly, while the latter acts slowly and cumulatively.

THE THERAPEUTICS OF RESORCINE.

Dujardin-Beaumetz§ regards the drug lightly in typhoid fever, but Lichtheim|| has obtained a fall of temperature with it, up to 3° C.

The antipyretic action of the drug is much better marked in inter-

* Baumann u. Preusse; "Archiv. f. Anat. u. Phys.," 1877, pp. 245-249. Fauber; "Zeitsch. f. Phys. Chem.," 1878. Vol. 2, p. 369.

† Op. cit.

‡ 86° F.

§ Bull. de Therap. Aug. 15, '81, p. 139.

|| Lancet, Nov. 13, 1881.

mittent fever and *light* cases of typhoid, than in pneumonia, erysipelas, etc.

Lichtheim has given 2 to 4 grammes in one dose ; others prefer 50 centigrammes to 2 grammes, in divided doses, per diem.

In acute articular rheumatism, the results are not so good as when salicylate of sodium is employed, but the pain passes away in two to three days, and the inflammation lasts one to two weeks at most, while exudations around the joints are usually rapidly absorbed.

Lichtheim reckons it second to *quinine only*, in malarial fevers, and finds that it rapidly reduces an engorged spleen.

Unlike the cinchona alkaloids, it may be used *during* the paroxysm.

He says that his usual dose of 2 to 4 grammes may be *doubled* if necessary. He uses it in chronic phthisis, bronchiectasis and gangræna pulmonûm with great success, as a spray in solution of 1 to 2 per cent. The reporter has used it for some years in putrid bronchitis and phthisis with the greatest satisfaction as a spray.

In chronic catarrh of the bladder, as injection and per orem, it has been very useful.

Soltmann* reports 91 cases of cholera infantum in which it was used, with 74 cures. He has reduced the mortality from 34 to 15 per cent., as it arrests vomiting and diarrhœa, acting as an anti-ferment. His dose is 10 to 30 centigrammes, 60 ccm. in hot infusion, e. g. chamomile.

Andeer† has used it very successfully as an anti-ferment in dilatation of the stomach, in $\frac{1}{2}$ per cent. sol. with stomach pump.

Perrier, at the Hôpital St. Antoine, has found a 1 per cent. solution very effective for dressing wounds, varicose, strumous or venereal ulcers, all of which rapidly healed under its topical use. As a gargle, he saw it rapidly cause diphtheritic false membranes to disappear, and believes that it combines all the good qualities of carbolic acid, with none of its dangers.‡

Its cost is rather excessive, but as it can be made in Switzerland for \$4 per kilo. (say \$1.80 per pound), its price, with large consumption, ought soon to fall.

As stated above, it is sold to physicians and the trade at 90 cents per ounce, by Mr. A. C. Dung, of New York.

* "Ærzt. Zeitschr.," No. 24, 1880. "Gaz. Med.," March 19, '81.

† "Die Anwendung d. R. bei-Magenleiden." "Zeitsch. f. Klin. Med.," Sept. 2. Vol. II.

‡ Résumé from "Brit. Jour. Chem.," 1881, p. 52.

Lichtheim finds* that a dose of *over* 1 gramme is often followed by vertigo, tinnitus, congested face and eyes, rapid respiration, frequent pulse, *sometimes* irregular. If given in a fever case, sweating and defervescence begin after 10-15 minutes, all symptoms of the drug passing completely off in an hour or less. He advises the administration of the medicine when fever and pulse are high, and then always finds the fever to subside as perspiration begins. He thinks the anti-pyretic action of resorcine lasts much longer than that of quinia, or of salicylic acid, but the initial intoxication is annoying.†

Brieger, of Berlin, has experimented with ortho-di-hydroxyl benzol or pyro-catechin, which seems a strong anti-ferment, although a toxic agent, but, being non-caustic, it may be used in larger doses than phenol.

The other isomer, hydro-quinone, is less toxic, and has been used with success in urethritis in solution of 1 to 2 per cent.

In cases of purulent conjunctivitis it has been successfully used and found un-irritating, while resorcine hurts more, but does not seem to have as curative an effect.

‡ Brieger corroborates Lichtheim entirely, but sometimes gives hydro-quinone instead in doses of 20 to 40 centigrammes, as having milder toxic effects, as well as being much better and un-irritating for hypodermic use, for which purpose he makes use of a 1 per cent. solution, injecting 2 to 3 ccm.

Dujardin-Beaumez§ finds resorcine very useful in all ulcerations, but especially "mucous patches." He considers it better than phenol in diphtheria, and thinks it will probably prove very useful in dyspepsia accompanied by food fermentation.

He finds it poisonous in doses of 6 to 7 grammes, acting then like phenol, but its great usefulness lies in anti-sepsis. As an internal medicine, he seems|| to care little for it, but admits its great superiority to phenol in its slight taste, odor and causticity.

Andeer says, that a 1 per cent. solution both prevents and arrests decomposition, and, in animals, it acts towards septic processes as

* Loc. cit. supra.

† "Correspond. Blatt f. Schw. Ærtze," in "Montpel. Med.," April, 1881, p. 369.

‡ "Pharm Zeit." 1880, No. 90. "Schweitz. Woch. f. d. Pharm.," 1880, No. 33.

§ Quoted "New Remedies," May, 1880, p. 152.

|| "Repertoire de Pharm.," March, 1881; "Jour. de Med. et de Chirurg.," March, 1881; "Pharm. Jour.," April 23, 1881; "Dub. Med. Jour.," Jan'y, 1881.

well as phenol, but is not liable to poison by absorption. Used as a wound dressing in animals, it seems to *always* heal per primam. Wounds of the cornea, conjunctiva, gums, etc., artificially infected with bacteria, and then dressed with resorcine, heal quickly without systemic infection, or development of germs under the scab. A solution, of strength of 2 per cent. or less, seems to have no irritating effect on healthy tissues, and when inhaled as spray, or applied even to the eyes, is not at all annoying. Applied in substance it is useful as a caustic to ulcers and condylomata, and from two years' use, Andeer can highly extol it in diphtheria, as he has never lost any case in which he used it. His dose is 1 to 2 grammes in 100 grammes of water, in divided doses, per diem. The best vehicles seem to be alcohol, glycerine and syrup of orange peel, but prefers to give it in substance in capsules or wafers. He makes much use of cotton and gauze impregnated with it.

He has used* it extensively in cystitis, and almost claims it as a specific. He reports 156 cases known by him in which it was very successfully used as an injection into the bladder. He cures acute cases with a 5 per cent. solution, and used it for gonorrhœa, and as spray in parasitic skin diseases.

He uses now a one to two per cent. solution for spray, and a one to five per cent. solution internally.

Von Langenbeck, of Berlin, has used it, since 1878, to replace phenol, with the best results, both curative and as free from toxæmia. "Resorcinized catgut" is beginning to be much used as a ligature.

Dujardin-Beaumetz and Callias† have used the drug in many cases of typhoid in a daily dosage of two to three grammes at most, but have not succeeded in materially reducing the temperature. Lichtheim expressly says, that the anti-pyretic dose *must* be large, while our authors seldom seem to have exceeded a total of 50 to 200 centigrammes, per diem, and in *divided* doses! They report well of it in acute articular rheumatism (but say, they fear they have used too small doses), as all inflammatory phenomena disappeared in seven to fourteen days, and all exudates quickly became absorbed. The temperature falls gradually to normal, the pulse dropping even to 55 and 60. Lichtheim's results were quicker from his larger dosage, as also in intermittent, corroborated by Koehler, where a dosage of two to four grammes often made an almost instantaneous, as well as

* Centralblatt f. d. Med. Wiss. September 3, 1881.

† "Bull. gen. di. Therap.," July 15-30, 1881.

permanent cure. Dujardin-Beaumetz used small doses and had no success in *this* disease, but corroborates all that has been said as to its use in spray for phthisis, bronchial catarrh and the catarrhs of the urinary tracts, both topically and internally. In enemata in dysentery, and rectal and peri-rectal inflammations, the drug has been of great service to them.

Dujardin-Beaumetz and Callias vaunt resorcine as a topical remedy, although they have been very successful in cases of putrid dyspepsia.

They relate many cases of varicose and strumous ulcers of the leg, phagadenic ulcers of the groin, chancrous adenitis, ulceration of the tonsil, etc. They advise its daily use to pale, flabby wounds, as it seems to surpass everything else for old and unhealthy sores of all descriptions, when it succeeds where everything else seems to fail. When used on mucous surfaces, in saturated solutions, the cauterization is too superficial to produce an eschar.

Andeer* prefers sublimed resorcine as much less poisonous. He has used it when it exhibited valuable hæmostatic properties. He finds† most of it eliminated by the kidneys as itself, but also as “ethereal-resorcine-potassium-sulphate.”

A case of poisoning is reported, in the “Physician and Surgeon” (U. S. of April 1, '82), after a dose of two drachms (eight grammes), when the body heat went down to 35° C.‡

RESORCINE AND PHENOL.

Antisepsis has taught us that phenol has faults as well as useful qualities, as a considerable number of cases of phenylic intoxication are to be met with in contemporary literature. These teach us the great uncertainty as to the size of the *poisonous dose* of phenol.

Kuester and Marckewald § show that its toxic dose is about seventy-six milligrammes per kilo. of body weight in dogs. Nothnagel and Rossbach || say, that for an adult a dose of one to two grammes is not harmless. A non-mortal dose (between 50 to 200 centigrammes) evokes these phenomena: Vertigo, hebetude, tinnitus aurium, deafness, feebleness, nausea and vomiting. So far resorcine gives no analogous symptoms in similar doses.

Phenol is annoying from its permanent and clinging odor, while

* “Lancet,” Nov. 13, 1881.

† Central bl. f. d. Med. Wiss., Dec. 17, 1881.

‡ 95° F.

§ “Berlin. Klin. Woch.” Congress of Germ. Soc. of Surgeons, April 10, 1878,

|| Op. cit., pp. 417-418.

its great caustic power forbids its use in strong solutions. It is also feebly soluble.

Resorcine is almost entirely odorless when pure, is a strong anti-septic and anti-ferment, has very feeble toxic and caustic qualities, and is very soluble in many fluids, chloroform being almost the only exception.

Its dose, in crystalline form, should begin at not more than twenty to twenty-five centigrammes, in solution, in pill form or in capsules or wafers. You will notice its sweet taste.

For hypodermic use, we may prepare a five per cent. to twenty per cent. solution, but for rectum, vagina or spray, a one per cent. to two per cent. solution is strong enough. For sluggish ulcers use a saturated solution, or in substance. If the skin is stained by it, lemon juice will remove the color.

CLINICAL NOTES ON OPIUM ADDICTION.

BY J. B. MATTISON, M.D.

That the continued use of opium, in any form, from whatever cause, will, in time, beget a well marked functional disorder, is a fact which no properly informed physician can fail to accept ; and that this disorder, under ordinary professional regime, is one difficult, and often impossible, to treat with success, is another fact which any one who has had experience in this direction, will, very likely, not dispute.

Under special supervision, however, this difficulty disappears, and, granting cases suitable for treatment, the disease proves promptly and easily curable, as the following notes will tend to attest.

A. B.; physician; *ae* 27 ; length of addiction one year ; amount 5 grs. morphia, hypodermically, daily ; cause, experimental medication—for details see *Med. and Surg. Reporter*, January 20, 1883; effects, general deterioration, mind and body. Treatment begun and the morphia withdrawn in five days, with so little discomfort that, on the evening of the fifth day, after taking his final dose of $\frac{1}{8}$ of a grain, patient attended and enjoyed a theatrical performance. Moderate restlessness within twenty-four hours. Thirty hours after abandonment, was suddenly seized with a severe attack of frontal neuralgia, which was met by an injection of $\frac{1}{2}$ gr. morphia. Prompt and permanent relief with eight hours sleep resulted. Thirty-six

hours later, sharp bout of lumbar pain. One half gr. morphia injected in painful part and again complete relief and several hours sleep. No further disturbance. Stomach and bowels quiet. Patient made a rapid recovery, and was dismissed, cured in seventeen days, having been able to sleep unaided each night for a week before leaving. Later tidings.—“ My present physical status is in every way satisfactory. I have gained six pounds since leaving, sleep well at night, and have an *enormous* appetite.”

C. D.; physician; ae 47; length of addiction 3 years; maximum taking, 15 grs. morphia subcutan, daily; on admission, 8 grs. per diem; cause, headache; effects, debility, anorexia, irritable temper—in fine, decided departure from his normal condition—body and mind.

Sedative treatment for seven days, when the morphia was abandoned, the final dose being $\frac{1}{2}$ of a grain. Painless restlessness followed in 14 hours. Thirty hours after abandonment severe attack of neuralgia involving right eye and temple. One grain of morphia injected which gave prompt relief and several hours sleep. Twenty-four hours later, another, but less severe neuralgic attack, which was relieved by a full dose 3 ii fl'd ext. Jamaica dogwood. No further trouble of this kind. Bowels and stomach undisturbed. Patient complained most of debility. Strength, sleep, and appetite rapidly returned, and he left for home, recovered, on the 19th day of his treatment, sleep having been free from hypnotic for the previous week.

Latest tidings from him.—“ I am well. My strength has almost entirely returned, and I enjoy my food better than I have for three years. My feelings are natural and not blunted as they were when I used morphine. I can truthfully say that I am better than I was at any time during the last three years. I feel like a man and not as a slave—thanks to you for the happy result attained.”

E. F.; gentleman; ae 27; three years' addiction; maximum taking 30 grs. morphia hypodermically, daily; cause, intercostal neuralgia; effects, debility, emaciation, insomnia, capricious appetite, alvine torpor and partial impotence. Had been under sanitarium treatment for nearly six months, with no other result than reduction of his daily allowance to 6 grains.

Sedative treatment was begun the third day after his admission, the morphia reduced at once to 4 grains, and entirely withdrawn in seven days. The results were restlessness and occasional attacks of gastric cramp. No disturbance of stomach or bowels. The reflex

irritation rapidly subsided, and patient convalesced so speedily that on the evening of the fifth day after abandonment, he was able to attend an operatic performance, and was dismissed, cured, on the twenty-first day of his treatment.

G. H.; physician; *ae.* 42; ten years addiction; daily taking, 18 grs. morphia, hypodermically; cause, peritonitis; effects, bowel torpor—for years no evacuation without enemas; vesical and sexual debility, anorexia, indigestion, hemorrhoids—the hemorrhage sometimes profuse, mental depression, muscular weakness and emaciation; in general, a wreck-like state of mind and body. On admission, was pallid and weak. Tonic regime, exclusively—strychnine, iron, and digitalis, with generous diet for ten days. Morphia then reduced to six grains without discomfort. Sedative treatment secured desired effect, and entire opiate withdrawal in eight days. During afternoon of last day's habituation—the final dose being one-third of a grain—had severe headache, of limited duration, relieved by hot sitz bath and cold to the head. Moderate restlessness followed, subsiding in 48 hours. No other symptom of note. No vomiting; no diarrhoea. Patient made an astonishingly rapid recovery, and was dismissed, cured, on the thirty-first day of his special treatment.

Later, per letter, he says: "Do you ask 'does the old enemy ever assert power, and tempt me to the hypodermic?' Most gladly can I answer, no. There is not the least physical desire for morphia!" Still further testimony to his radical recovery is his present active pursuit of his calling.

The therapeutics of these cases included bromide of sodium, hot baths, electricity—both galvanic and faradic current, atropia, strychnia, hyoscyamia, quinia, chloral, coca, cannabis indica, Jamaica dogwood, varied tonics, full feeding, and cheerful surroundings.

To note these in detail requires some preliminary reference to the morbid condition they are intended to relieve. The symptomatology of opium abandonment, in our opinion, relates to an exalted activity of the spinal cord manifested in varied reflex irritations. To this are attributable the aches, pains, vomiting, purging, collapse and horrible discomfort, in general, which follow entire and abrupt withdrawal of a long accustomed opiate. If this be correct, it is also correct to assert that any drug able to control this over-action must prove potent for good in treatment. Such we have in the bromides. Their power to subdue reflex irritation is known to all, and in no disorder is this more happily proven than in the one to which we refer.

A special and *original* application of this power is what we term *preliminary sedation*, which consists in the giving of the bromide for a time *prior* to entire opiate withdrawal—meanwhile gradually reducing the accustomed narcotic—so that at the time of maximum spinal irritation we have maximum bromide sedation, and the one counteracts and controls the other.

We use, exclusively, bromide of sodium. It has two leading advantages. Saving bromide of lithium, it contains the largest proportion of bromine, which is the active factor, and it is less unpleasant than any other, never, in our experience, causing gastric trouble. Minor points in its favor are, lessened tendency to digestive and muscular impairment, and cutaneous irritation.

We use it in full doses—60 grains, increased to 100 or 120—in eight ounces of water, twice, daily, at twelve-hour intervals, and continue it from five to ten days, or even longer—average time one week—the extent of its giving, both amount and duration, depending entirely on the peculiarities of each case, before and during treatment.

Hot baths, 110° to 112° , are the most efficient agent at command to relieve and remove the peculiar restlessness which is an *invariable* sequel of opiate abandonment. They are given often as required, ten to twenty minutes duration. Their efficacy is sometimes enhanced by a short douche or shower.

Electricity is used as a tonic and sedative. The galvanic current we often employ from the outset, and, after abandonment, find it useful as a general restorative and remover of local pains. For the muscular debility following withdrawal, nothing, in our experience, equals general faradization—10 to 20 minute seances daily. The sense of exhilarating comfort resulting is often very decided. Occasionally it is used twice, daily, and, very exceptionally, it is not at all acceptable.

Atropia is used in initial doses of $1\frac{1}{20}$ gr., hypodermically *ter dié*—or its equivalent by the mouth—and pushed until it produces systemic effects—dry throat and disturbed vision. This has never required a dose exceeding $\frac{1}{40}$ of a grain.

Strychnia is given in subcutaneous doses of $\frac{1}{30}$ of a gr., thrice daily, and continued, in some form, throughout treatment.

Hyoscyamia, in our experience, has proven itself the nearest approach to morphia of any alkaloid yet presented. We use Merck's *amorphous*, in the dose of $\frac{1}{8}$ gr. hypodermically, and have known it, repeatedly, to produce steady sleep of several hours' duration.

Quinia is used for a two-fold purpose—tonic and sedative. As the former, in two grain doses, three or four times daily, throughout treatment. As a sedative, in 20 gr. doses, given a few hours in advance of the restlessness following withdrawal, and repeated at 12 or 24 hour intervals, as required. Thermometric observation proves its power to control the rise in temperature noted after opiate abandonment. Subsequently, it is sometimes given as a soporific, and its efficacy, in this respect is, to us, beyond dispute.

During the first three or four days after opiate discontinuance, chloral fails of its usual effect and we never employ it. We have not noted the excitement, stated by Levenstein, but, simply, that it does not induce sleep. Subsequently, as a hypnotic, it answers every purpose, and is given—usually combined with a bromide or hyoscyamus—as long as may be required. We use Squibb's make, in decided doses, our experience being that a single full dose is preferable to one small and frequently repeated. When unacceptable to the stomach it is often kindly received, per rectum, same dose as by mouth, in an ounce or half ounce of warm mucilage.

Cocoa, though far from being what some theoretical enthusiasts have claimed, is a stimulant of value and as such fills a place in treatment. We use Squibb's extract, in half ounce doses, frequently repeated after the opiate withdrawal.

Cannabis indica, in some respects, is an efficient substitute for opium. It relieves pain and brings sleep, though often causing a mild, harmless intoxication. After a trial of various preparations, foreign and domestic, we prefer the fluid extract made by Squibb. It must be given in large doses, the ordinary dose of the books being of no avail whatever.

Jamaica dogwood is a somewhat uncertain anodyne and soporific, yet worthy of trial to relieve the neuralgic sequelae of opium addiction. We give it in full oz. doses.

Varied tonics include iron, arsenic, digitalis and cod liver oil. The first two if anemic. Digitalis after the sedative treatment, as a tonic and also diuretic, to eliminate the bromine. Cod liver oil is a particularly valuable roborant, possessed of special nutrient properties to repair the wear and tear of prolonged narcotic addiction. We prefer Moller's plain oil and Phillips' emulsion.

During the first two days of opium abstinence, patients are best restricted to a diet of milk and lime water, in small amounts, often repeated. After that, full feeding is allowed and encouraged to the largest extent consistent with gastric comfort.

Cheerful surroundings are a valued adjunct in treatment. No restraint is imposed upon patients, and they are permitted to indulge in walks, rides, drives and amusements freely as possible. The practice of subjecting them to a rigorous search on admission, and regarding them as prisoners under strict surveillance during the period of active treatment, we do not approve. No one of a fine sensitive nature can rest under this constant suspicion without a sense of resentment, which cannot be other than prejudicial to the cordial relation which should ever exist between physician and patient. We ask for and extend confidence, and believe we largely enhance a good result in so doing.

Nor do we share in the opinion, largely held, that no reliance is to be placed on the word of opium habitues. While admitting that the greatest liar we ever knew belonged to this class, this admission affords no support whatever to the assertion that they *all* are liars. That the habitual use of opium, in many cases, does exert a baneful influence on the moral nature we are fully aware, but we also know that in the ranks of these unfortunates are those who would scorn to deceive, and whose statements are as worthy of credence as those upon whom has not fallen this blight.

Under the plan of treatment we pursue, the temptation to secret taking is small. Patients are allowed a sufficient amount of the accustomed opiate during the sedative regime to obviate any great discomfort. Besides, we have at command, *infallible* means for determining clandestine indulgence, both before and after the opiate withdrawal.

Two pre-requisites are essential—freedom from organic disease, and an earnest desire of the patient to recover. Granting these, excess of taking—time or quantity—offers no bar to success.

Before closing, we cannot refrain from inviting attention to this method of treatment as compared with that of peremptory abandonment or prolonged decrease, offering, as it does, a more or less happy medium between these two extremes. If our statement as to its merit be true—and we challenge proof to the contrary—then we make bold to assert that no physician is warranted, save under circumstances peculiar and beyond control, in subjecting his patient to the torturing ordeal of abrupt withdrawal. We are well aware that it has the sanction of men otherwise eminent in the profession; but, we venture to suggest, with no lack of respect to these gentlemen, that, like a somewhat famous nautical individual, “they mean well; but they don’t *know*.” Theory is one thing—practice.

another, and we are quite certain, were *they* compelled to undergo the trial, there would be a rapid and radical change of opinion. We regard it as cruel, barbarous—*utterly unworthy a healing art*.

Gradual decrease has its advocates, and sometimes its advantages. It is the plan pursued by the charlatans, who find in the peculiar, secretive character of this disorder a fertile field. It is a mistake to assert, as does Howe, that "tapering off will not effect a cure." It often succeeds, but, oftener fails, unless under close and constant professional observation. Its great disadvantage is, that prolonged decrease tries the patience to such an extent that it is sooner or later abandoned, patient lacking both time and inclination for its continuance.

Should any physician, having a personal or other interest in the topic to which this paper refers, be desirous of the name and address of the cases here cited, we are privileged to place them at his service.

THE MEDICAL SOCIETY OF THE COUNTY OF KINGS.

The Sixty-second Annual Meeting of the Medical Society of the County of Kings was held January 16th, 1883, the president, Dr. C. Jewett, in the chair. The minutes of the previous meeting were read and approved, about 100 members present.

MEMBERSHIP.

The following applications were made: By Dr. Segur—T. Mortimer Lloyd, M. D., 163 Congress Street; by Dr. W. A. Northridge—Charles T. Hepp, M. D., 103 Jackson Street, E. D.; by Dr. Charles Jewett—Thomas H. Northridge, M. D., 39 Greene Avenue; by Dr. B. F. Westbrook—Emilio Buchaca, M. D., 168 Clinton Street; and by Dr. Rochester—J. J. Luis, M. D., 215 Grand Avenue.

The Council reported the acceptance of the following candidates: Norris M. Carter, M. D., Albany Medical College, 1859; W. F. Millington, M. D., University City of N. Y., 1877; and Hugo Doergens, M. D., University of Würzburg, 1880.

The President declared the following to be duly elected members: Drs. S. H. Benton, L. De B. Kuhn, and James C. Kennedy.

The Treasurer then reported his list of "ineligibles," roll of membership, etc.

The Secretary made his report of "delinquents," under Chap. V., § 3 of the By-laws.

THE ELECTION.

The next business in order was the Election of Officers for the ensuing year. The rules of 1880-81, governing elections, were re-adopted.

The Council made the following additional recommendations, which were adopted:

I. In compliance with the instructions of the December meeting, the accompanying ballot for delegates to the American Medical Association is proposed.

FOR 36 DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION*.

Drs. J. S. Andrews,	Drs. E. A. Lewis,	Drs. H. N. Read,
S. G. Armor,	W. H. Martin,	W. W. Reese,
G. W. Baker,	A. R. Matheson,	J. D. Rushmore,
H. L. Bartlett,	A. Mathewson,	W. G. Russell.
John Byrne,	J. B. Mattison,	J. C. Shaw,
A. W. Catlin,	J. A. McCorkle,	A. J. C. Skene,
Alex. S. Clarke,	Andrew Otterson,	E. R. Squibb,
A. M. Curry,	A. R. Paine,	Jerome Walker,
T. R. French,	Ernest Palmer,	J. R. Vanderveer,
L. C. Gray,	J. S. Prout,	R. L. VanKleeck,
Alex. Hutchins,	W. H. Rand,	Wm. Wallace,
J. C. Hutchison,	J. H. Raymond,	W. Waterworth,

It is recommended that the President deposit this ballot as the vote of the Society.

II. The President shall have power to fill vacancies that may hereafter occur in the above named delegation, and to appoint one delegate to the Queens County Medical Society.

III,—Concerning the choice of Censors, the Council decidedly recommends that the members, in voting, select their candidates from the different districts of the city, so that all parts of the city may be represented in the Board of Censors. Later the President deposited the ballot for delegates as above printed.

The Chair announced the withdrawal of Drs. G. W. Baker and J. D. Rushmore as candidates for Censor.

The following gentlemen acted as tellers: Drs. Paine, Emery, H. F. Williams, Campbell, J. C. Schapps, De La Vergne and Scrimgeour.

Dr. Hopkins remarked that he found himself in a position before the Society which he did not like to occupy. Two of the candidates nominated for President had withdrawn, leaving himself the sole candidate for the office. He thought the Society should never go into an election with but one candidate for any office. Therefore, he moved the suspension of the By-laws in order that other nominations for President might be made. The motion was seconded.

The Chair stated that the By-laws declare that votes be cast for nominees made at the December meeting preceding the election, but Dr. Hopkins moved their suspension. He declared the motion competent; it was adopted without dissenting voice.

The following additional nominations were then made: Dr. J. D. Rushmore, Dr. S. Sherwell (declined), Dr. A. Mathewson (declined), and Dr. E. N. Chapman (declined).

Dr. W. C. Otterson inquired whether a delegate to the State Medical Society forfeits his delegateship by failing to attend any one of the meetings after having gone to the first, or to the first and second meetings.

Dr. E. R. Squibb, replied that he does not forfeit his delegateship; but it has been customary to ascertain if any delegate is not going, and to appoint a substitute if he is not; but if a delegate does not so notify the President, his delegateship is good for the four years for which he is elected. But he is ineligible for permanent membership in the State Society, unless he has attended three meetings as delegate; but they need not be three successive meetings.

* Convention to be held at Cleveland, Ohio, June 5, 1833.

The Secretary read the following By-law in relation to delegates:

Chap. XI, § 2.—“Any member elected as delegate to the Medical Society of the State of New York, who shall be unable to act as delegate during two successive years, shall be considered to have vacated his position as delegate.”

THE TREASURER presented his financial report for the past year. It was referred to an Auditing Committee, Drs. Hutchins and Stewart. Later in the evening this committee reported the Treasurer's accounts were found correct. Adopted.

The Treasurer presented the following recommendations:

(1). That the State transactions be disposed of in the same manner as last year, *i.e.*, at a cost not to exceed one dollar. Members of this Council and of the Society's Committees to be supplied each with a copy gratis. Adopted.

(2). That twenty-five copies of THE PROCEEDINGS be bound at a cost not to exceed seventy-five cents a copy. Adopted.

(3). That the dues for the year 1883 be five dollars.

Dr. Westbrook offered as an amendment to this recommendation, as an act of justice to those who had paid the tax for collecting dues in arrears under the plan adopted at the last annual meeting, that the tax which certain members had paid be credited them on the dues accruing for the year 1883. The amendment was lost.

The fourth recommendation, namely: that six hundred dollars be paid from the treasury for the support of THE PROCEEDINGS, was considered, together with the third recommendation. After some discussion they were adopted.

In the course of the discussion the CHAIR said he held in his hand a document pertinent to the present discussion, which he would read at this time. He believed there was public spirit enough to sustain the present dues of \$5.00 per annum, and this Society certainly owes more to THE PROCEEDINGS as published in its present form than to anything else in its history. Nothing has done more to promote the prosperity of the Society. It has not only provided a copy of the transactions for every member of the Society, but it has brought the Society and its members into notice abroad. It has also provided a reading room where 122 journals or more are constantly ready, and are on file for consultation, but many of the back volumes are often exceedingly valuable for reference. It has, therefore, seemed to the Council that a continuance of this publication is not only essential, but that it should be enhanced, and hence the Committee appointed to provide ways and means by which it might be accomplished. This report should properly be made to the next Council, but as it is, germane to the subject, it is introduced here.

REPORT OF COMMITTEE.

“The Committee to provide ways and means to enhance the PROCEEDINGS, respectfully report the following recommendations:

“1st. That the Council appoint four Collaborators to assist the Editor in the preparation of the PROCEEDINGS viz.: one for the department of Pathology, who shall edit the transactions of the Pathological Section, and whose department shall appear in each issue; and one each, for Surgery, General Practice of Medicine, and Obstetrics and Gynecology, whose duty it shall be to prepare a quarterly epitome of the literature of those subjects, one to appear in each issue.

“2nd. That the advertising sheets be restored to the PROCEEDINGS and that an agent be engaged to solicit advertisements and collect the proceeds.”

THE SCIENTIFIC BUSINESS of the evening was as follows:

1—The Antiseptic Value of Resorcine: by Dr. N. B. Sizer for the Committee of Hygiene:

2—Clinical Notes on Opium Addiction: by Dr. J. B. Mattison. The papers were read by title.

The Chair stated that a brief notice of the work of the Pathological Society, which had been prepared by Dr. Bartley, its Secretary, would now be read.

— THE PATHOLOGICAL SOCIETY, OR PATHOLOGICAL SECTION, of the Kings County Society, as it was formerly called, has had a continued existence of about six years. It has now a membership of sixty-five, and an average attendance of about twelve.

The meetings are held regularly on the second and fourth evenings of each month.

During the past year the meetings have been held at the Long Island College Hospital, where the society has a museum, containing some valuable specimens, in a room especially set apart for this purpose.

Recently, the place of meeting has been changed to the Brooklyn Eye and Ear Hospital, in order to be more central in location. The museum still remains at the Long Island College Hospital. Now, as heretofore, the work of the Society is principally the exhibition of pathological specimens, with the presentation of a written account of the case and autopsy, and the discussion of the same by the members present. A great deal of valuable material of this kind has been brought before its members during the past year.

Unfortunately for the progress of the Society, the proceedings have not been published as regularly during the last two years as could be desired; but it is hoped that negotiations, now in progress, will result in the regular issue of its proceedings hereafter.

It is always understood that all members of the County Society are welcome at its meetings; and it is desired that more of them bring or send their pathological material to its meetings, rather than allow it to go to waste, as is now often done.

There is an abundance of such material continually going to waste, which might be made a credit to any society, and to the Brooklyn profession at large. The members of the County Society are invited to bring, or send, to the Curator or Secretary of the Pathological Society, any interesting material they may meet with from time to time, with a history of the same. When desired, it may be returned to the owner, or deposited in the museum for safe keeping. The officers for the year 1883, are as follows: President, Dr. J. N. Freeman; Vice-President, Dr. John Merritt; Secretary, E. H. Bartley; Treasurer, Dr. A. Ross Matheson; Editor, B. F. Westbrook; Curator, J. H. Hunt.

Respectfully submitted,

E. H. BARTLEY,
Secretary.

REPORT OF TELLERS.

The ballots for Officers of the Society for 1883 having in the meantime been deposited and canvassed, the following report of the tellers was presented:

Whole number of votes cast 83. Number necessary to a choice, 42.

For President.—Dr. Hopkins received 55 votes.

“ Rushmore “ 14 “

Dr. Hopkins was declared elected.

For Vice-President—Dr. Barber received 29 votes.

“ Colton “ 34 “

“ Freeman “ 19 “

There was no election.

For Secretary.—Dr. Wyckoff received 82 votes.

He was declared elected.

For Assistant Secretary.—Dr. Mattison received 37 votes.

“ E. H. Squibb “ 44 “

Dr. Squibb was declared elected.

For Treasurer.—Dr. Vanderveer received 82 votes.

Dr. Vanderveer was declared elected.

For Librarian.—Dr. French received 82 votes.

Dr. French was declared elected

For Censors.—Dr. G. W. Baker received 32 votes.

“ E. H. Colton “ 25 “

“ G. R. Fowler “ 32 “

“ A. Hutchins “ 57 “

“ A. R. Matheson “ 25 “

“ E. Palmer “ 12 “

“ E. Reynolds “ 11 “

“ J. D. Rushmore “ 28 “

“ C. Jewett “ 53 “

“ W. Wallace “ 29 “

“ B. F. Westbrook “ 39 “

“ G. Wieber “ 15 “

“ J. S. Wight “ 30 “

Necessary to a choice, 40.

Drs. Hutchins and Jewett were elected.

For two delegates to the Medical Society of the State of New York (to fill two vacancies, 1883 to 1885, inclusive).

Dr. Chapman received 45 votes.

“ Pilcher “ 47 “

“ Vanderveer “ 28 “

“ Wallace “ 44 “

Drs. Chapman and Pilcher were declared duly elected to fill the existing vacancies.

The tellers reported the non-election of Vice-President and three Censors.

The Chair called attention to the fact that Dr. Baker had already withdrawn.

The candidates receiving the next highest number of votes, were Drs. Westbrook, Fowler and Wight, and the Secretary was directed to cast the ballot for these gentlemen as censors, and for Dr. Colton as Vice-President.

These gentlemen were therefore declared elected to fill the respective offices.

NEW CODE.

Dr. Skene moved the repeal of that portion of the resolutions adopted at the November, 1882, meeting, and printed in the November and December PROCEEDINGS reading as follows:

“ Resolved, * * * * * That the said delegates be instructed to vote on this subject in the interest of these resolutions, upon whatever issue may arise concerning the Code of Ethics, or their abrogation, because these resolutions express the will of a majority in the Society to be represented by said delegates.” The motion was seconded.

After discussion, a motion was made by Dr. Sullivan and declared lost, to lay the vote of Dr. Skene on the table.

The ayes and nays being called for, the result was as follows:

Ayes—Drs. Kuhn (L. de B.), Benton, Paine, Emery, Squibb (E. H.), Squibb, (E. R.), French, Hutchins, Otterson (W. C.), Rochester, Hopkins, Sherwell, Vanderveer, Barber, Terry, Wight, Chapman, Hutchison, Sullivan, Allaben, Conroy, Russell, and Wieber—23.

Nays—Reese, Freeman, Smith (G.K.), Stuart, Dudley, Fuller, Skene, Burnard, Cork, Cutter, Mathewson (A.), Schapps (J. C.), Campbell, Wells, Rankin, Northridge, Myerle, Pilcher (L. S.), Chase (W. B.), Kortright, Colton, Matheson, Burge, Westbrook (B. F.), Bunker (H. A.), Read, Barns, Joye, Willson, Prout, Fowler, Wallace, Gray, Richardson, Bartley, Rand, West, Stirling, Leuf, Jones, Haslett, King, Kretzschmar, Mattison, Butler, Walker, Dickinson, Scrimgeour, Williams (H. F.), Spencer, Beasley, Thallon—52.

The motion to lay on the table was, therefore, declared lost.

The motion of Dr. Skene was then in order, and the ayes and nays were called for.

The question being raised, whether it was competent to vote upon this motion by ayes and nays, the Chair ruled that such a proceeding was in order, provided five members called for such a vote.

Five members having signified their desire therefor, the vote to rescind was taken, and resulted as follows:

Ages—Drs. Reese, Stuart, Skene, Mathewson (A.), Myerle, Chase (W. B.), Burge, Barns, Prout, Gray, Rand, Leuf, King, Walker, Williams (H. F.), Thallon, Read, Freeman, Dudley, Burnard, Rankin, Otterson (W. C.), Colton, Westbrook (B. F.), Joye, Richardson, Fowler, West, Jones, Kretzschmar, Dickinson, Spencer, Catlin, Allen, Smith (G. K.), Fuller, Cutter, Northridge, Pilcher, Matheson, Bunker (H. A.), Willson, Wallace, Bartley, Stirling, Haslett, Mattison, Scrimgeour, Beasley—49.

Nays—Kuhn (L. D.), Schapps (J. C.), Squibb (E. H.), Hutchins, Hopkins, Barber, Hutchison, Allaben, Wight, Wieber, Benton, Emery, Squibb (E. R.), Kortright, Sherwell, Terry, Sullivan, Russell, Conroy, Wyckoff, Paine, Campbell, French, Rochester, Vanderveer, Chapman—26.

The Chair declared the motion to be carried, and the action instructing delegates to be rescinded.

Dr. Hopkins presented the report of the Committee to revise the fee bill.

FEE BILL OF THE MEDICAL SOCIETY, COUNTY OF
KINGS.

Catheter, Introduction of,	-	-	-	-	-	\$3 to \$15
Cleft, Palate Operation for,	-	-	-	-	-	100 to 1000
Club Foot, Operation for Single,	-	-	-	-	-	50 to 250
“ “ “ “ Double,	-	-	-	-	-	100 to 500
Dislocation, Reduction of,	-	-	-	-	-	10 to 100
Eye or Ear, Minor Operations for the,	-	-	-	-	-	10 to 50
“ “ more Important Operations for the,	-	-	-	-	-	50 to 300
“ Strabismus, Operation for,	-	-	-	-	-	50 to 100
Fistula in Perineo and Ano,	-	-	-	-	-	50 to 300
“ Vesico-Vaginal and Recto-Vaginal,	-	-	-	-	-	100 to 500
Fracture, Reducing Single,	-	-	-	-	-	10 to 50
“ “ Compound,	-	-	-	-	-	50 to 200
Fraenum Linguae, Dividing,	-	-	-	-	-	5 to 10
Gonorrhœa, Treatment of, in advance,	-	-	-	-	-	25 to 50
Hare-Lip, Operation for,	-	-	-	-	-	25 to 250
Hemorrhoids, Operation for,	-	-	-	-	-	25 to 100
Hernia, Reduction of,	-	-	-	-	-	10 to 50
“ Strangulated, Reduction of,	-	-	-	-	-	50 to 200
“ “ Operation for,	-	-	-	-	-	100 to 500
Hydrocele, Operation for,	-	-	-	-	-	20 to 75
Imperforate Rectum, Vagina, &c.,	-	-	-	-	-	25 to 500
Lithotomy and Lithotrity,	-	-	-	-	-	250 to 1000
Paracentesis, Abdominal or Thoracic,	-	-	-	-	-	25 to 100
Phymosis, Operation for,	-	-	-	-	-	20 to 50
Plastic Operations,	-	-	-	-	-	50 to 1000
Resection of Joints,	-	-	-	-	-	200 to 500
Stricture, of Æsophagus or Rectum or Urethra,	-	-	-	-	-	25 to 200
Seton, inserting,	-	-	-	-	-	5 to 10
Syphilis, Treatment of, in advance,	-	-	-	-	-	25 to 200
Tracheotomy,	-	-	-	-	-	100 to 300
Trephining,	-	-	-	-	-	50 to 500
Tumor, Removal of Simple,	-	-	-	-	-	25 to 50
“ “ “ Large or Complicated,	-	-	-	-	-	50 to 1000

Subsequent Attendance in Surgical Cases to be Charged for.

Post-mortem Examinations,	-	-	-	-	-	\$10 to \$100
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The report was adopted.

Dr. Hopkins offered the following proposed amendment to Chap. v, § 3, in By-laws, which took the usual course :

If at any election the number of candidates for any office be reduced to one, whether by declination or otherwise, it shall, at the annual meeting, be lawful for any member to move that the nominations be re-opened, and thereupon one or more additional candidates may be proposed, who may be balloted for in the same manner as if duly proposed at the December meeting.

REPORT OF THE LIBRARIAN, 1882.

THE Librarian takes pleasure in reporting an increase of interest in the department under his charge. Though no new books have been added during the past year by the Library Committee, those on the shelves have been more largely used for reading and reference than at any previous time.

During the year donations of old books and journals have been received from Drs. Prout, A. Hartman, H. Hartman, and Mr. Henry Goldmark. Vol. III. of the United States *Index Medicus*, Ch. to Dz, inclusive, has been received from Dr. J. S. Billings, U. S. Army, and the Transactions of the Michigan State Society, 1882, from the secretary of that society. The Transactions of the International Medical Congress, London, 1881, which were purchased by the Library Committee last year, but not mentioned in the list, have since been bound and placed upon the shelves.

The complete file of journals mentioned in the Librarian's report for 1881, are complete to date, and last year's volumes have since been bound. One hundred and twenty-two journals are now received in exchange for the PROCEEDINGS, all of which are to be found in the journal rack in the reading room.

The Library Committee thought it wise not to solicit subscriptions during the past year, but to postpone further action till time will bring with it a greater desire on the part of the members of the Society to contribute. In the opinion of your reporter, the time is again ripe for a call for an increase to the library. The shelves in the reading room are full, but the nature of the material is, for a large part, such that no great loss would be sustained by retiring it, especially if in favor of desirable recent publications and valuable works of reference,

Respectfully submitted,

T. R. FRENCH, M. D.,

Librarian Medical Society, County of Kings.

The hour being late, it was, on motion ordered that the consideration of all other executive business be postponed to an adjourned annual meeting to be held February 20, 1883, at 8 P. M. On motion the Society adjourned.

R. M. WYCKOFF, Secretary.

Ἀσκληπιὸς



ὁ Σωτὴρ

Χάρμα μέγ' ἀνθρωποῖσι, κακῶν θελκτῆρ' οδυναῶν.

Hymns of Homer, No. XVI.

PROLIFERATIONS.

— THE SEVENTH VOLUME OF THE PROCEEDINGS is completed with the present issue. This volume differs from the preceding six, in having been published without advertisements, save on the cover pages. This was rendered possible by a subsidy from the Society, which has been most economically used during the past year.

At the late annual meeting, the Society voted a sum sufficient to continue this work, viz.: to publish its Minutes and to encourage the preparation of papers to be presented to the Society, by giving to such papers an immediate and wide-spread circulation.

The new volume, beginning with the March number, will contain some new attractions. A strong desire to add interest and value to THE PROCEEDINGS has taken shape that has met the approval of the Council, an important feature of which is, the publication of the valuable Transactions of the Brooklyn Pathological Society. The increased expenses, attendant upon the publication of these Transactions, and certain other departments, the details of which are yet to be announced, are to be met by a return to the advertising pages of former years.

To those friends, who have already favored us with their advertising patronage, and to all who may, in the future, hold it to their advantage to advertise in THE PROCEEDINGS, a guarantee is given of a solid circulation among the physicians of the city of Brooklyn and County of Kings. A copy is sent regularly each month to each registered physician in the county. Though THE PROCEEDINGS meets a very large number of physicians outside the city, its solid and regular appeal to the physicians in this county, gives it an importance as an advertising medium unequaled by any Medical Journal in this country. Members of this society will do well to press this matter upon the attention of advertisers for their advantage, and for the benefit of THE PROCEEDINGS.

— CALENDULATED BORACIC ACID.—Take of tincture of calendula 3 i, boracic acid 3 i, mix and expose for evaporation. When fully dry, add to the above boracic acid 3 ii, and rub up into an impalpable powder.

The above is recommended for use, in chronic suppuration of the middle ear, by Doctor Sexton, of New York city, and his formula is very slightly modified. In the treatment of this class of cases the present tendency is to the avoidance of syringing or other use of fluids as far as possible, and the substitution therefor of dry cleansing, and the use of mild drying and astringent powders. J. S. P.

— THE AMERICAN MEDICAL ASSOCIATION, meets June 5, 1883, at Cleveland, Ohio.

— THE SECRETARY OF THE SOCIETY desires to be informed if any of the credentials of the delegates to the State Society are in error, in giving the term of the delegacy, otherwise than ending in 1885—inclusive of the latter year.

— THE TREATMENT OF HYSTERIA BY METALLO-THERAPY.—One of our indefatigable German *confrères* contributes in the *Archiv für heitere gynäkologie* the following instance of such successful treatment of this rebellious disease that we deem it worthy of notice. Marie O., a chamber-maid in the house of a Privy Councillor in Berlin, was compelled, among various other laborious duties, to light to the door the numerous guests who visited the house nearly every evening. The reporter had, occasionally, opportunity (she was charming, and nineteen years old) to notice how she comported herself to the visitors who attempted to call a smile to her lips by liberal “trink-gelder.” This, however, was no easy task; on account, probably, of some anomaly of menstruation, she was hysterical apparently; always solemn, almost melancholy in her bearing; sometimes he even thought he saw tears in her eyes. This case of hysteria, thus clearly made out, seemed to him in every way suitable for the study of the influence of metals on the psychical state, and the reporter determined at the next evening reception to which he was invited, to institute some experiment on this point. Accordingly he posted himself behind her as the guests passed out in leaving the house; when nickel, copper, or silver in pieces of small circumference came in contact with her beautiful hand, the melancholic condition remained unaltered, became even indeed painfully exaggerated. A larger piece of silver, apparently about as large in size as a five-mark piece, seemed, reflexly, to call forth some transitory improvement. Suddenly, however, as a handsome young baron passed be-

fore her, and with a meaning look pressed something into her outstretched hand, he believed that a complete cure had been accomplished; he looked closer—it was a gold ten-mark piece.

The above case is reported as showing the comparative value of gold and other metals in the treatment of hysteria; it would seem that, to be equally efficacious, silver must be applied in larger quantities than gold.

— THE FOLLOWING INCIDENT happened in the court room of Binghamton, and will interest all students of comparative anatomy:—

The case in point was this:—Mr. A. sold a colt, as a gelding, to Mr. B., which colt had had but one testicle removed, the other remaining within the cavity of the abdomen. The veterinary surgeon who had castrated the animal was sworn, and, on his cross-examination, stated the following interesting features in the anatomy of the horse:—

Atty.—What are varicose veins and where are they found?

Witness.—I don't know, but I can tell where the bellicose veins are.

Atty.—Where are they?

Witness.—Close to the belly.

Atty.—Where is the scrotum?

Witness.—I am not quite certain, but I think that it is the film that covers the teeth during infancy.

Atty.—Have you ever made any examinations in the abdominal region?

Witness.—No; all of my examinations have been made in Broome County.

Atty.—That is sufficient.

—WANTED HIM TO TAKE MORE EXERCISE.—Scene: Office of a pompous doctor who knows it all. Enter a tired man, who drops into a seat, and says that he wants treatment. The doctor puts on his eye glasses, looks at his tongue, feels of his pulse, sounds his chest, and then draws up to his full height, and says: "Same old story, my friend. Men can't live without fresh air. No use trying it. I could make myself a corpse, like you are doing by degrees, if I sat down in my office and didn't stir. You must have fresh air; you must take long walks, and brace up by staying out doors. Now I could make a drug store of you, and you would think I was a smart man, but my advice to you is to walk, walk, walk."

Patient.—But, Doctor—

Doctor.—That's right. Argue the question. That's my reward.

Of course you know all about my business. Now, will you take my advice? Take long walks every day, several times a day, and get your blood in circulation.

Patient.—I do walk, Doctor. I——

Doctor.—Of course you do walk. I know that; but walk more. Walk ten times as much as you do now. That will cure you.

Patient.—But my business——

Doctor.—Of course, your business prevents it. Change your business, so that you will have to walk more. What is your business?

Patient.—I am a letter-carrier.

Doctor (paralyzed)—My friend, permit me to once more examine your tongue.

—DR. FRANCIS GOODWIN was born in Newtonbutler, County Fermanagh, Ireland, October 22d, 1829. His early education was under the preceptorship of his uncle, a clergyman, who prepared him by a thorough course of study, for admission to college.

He entered the Medical Department of Trinity College, Dublin, in the year 1846, where he studied three years.

November, 1849, he was appointed Clinical Practicing Assistant, in Meath Hospital, and County of Dublin Infirmary for one year. At the expiration of his term of service in those institutions, he went to London, and presented himself for examination before the Court of Examining Surgeons of England.

August 5th, 1851, he was made a member of the Royal College of Surgeons, and admitted to fellowship.

September, 1851, he was appointed an assistant surgeon in the British Army, and assigned to duty in East India, but declined the position and sailed to America.

Dr. Goodwin commenced the practice of his profession in the City of Brooklyn, in November, 1851. He was successful from the commencement of his career.

The doctor devoted his time almost exclusively to the practice of his profession, taking little time for rest or recreation.

In his intercourse with his professional brethren, Dr. Goodwin's conduct was straightward, honorable, and generous; to his patients, he was gentle, attentive, and kind. High moral principle, an affectionate disposition, an instinctive sentiment of delicacy, propriety, and consideration for the feelings of others, and a retiring modesty and simplicity of deportment, as much distinguished and endeared him to the domestic and social relations of life, as his professional attainments have elevated him to the distinction he held in public opinion.

The drudgery of professional life and frequent exposure, destroyed his vigorous constitution. His health began to fail about a year preceding his death, which resulted more from a general breaking down of the whole system, than from any particular disease. He died on October 15th, 1882.

E. J. CAROLAN.

J. RANDOLPH QUINN.

—MANY PEOPLE KILLED BY ANIMALS.—Perpetual war has always existed between man and most other animals; the dog and the horse are usually on our side. Omitting accidents, the destruction of human life by animals is very small in this country—perhaps not zoo a year, and these largely from the bites of rattlesnakes and

cobras. Even these might be termed accidental, since these serpents only bite in self-defense when come upon unawares. But it is quite different in some countries. Take British India, for example; the recent official report gives the total loss of life during a year thus: Killed by tigers, 889; by wolves, 256; by leopards, 239; by bears, 75; by wild elephants, 58; by hyenas, 8; by other animals, alligators, rhinoceroses, wild boars, etc., 1,232; and by serpents, 18,670! Tigers, leopards, and allied animals killed nearly 44,000 cattle, to say nothing of sheep and goats. During the year the government paid for killing 4,558 wolves, 3,303 leopards and tigers, 1,014 hyenas, 991 bears, and 254,963 poisonous serpents. A recent writer estimates that since the Christian era, 200,000,000 people have been killed by animals.

— CHRONIC PLEURISY.—Thoracentesis will be discussed at the February meeting of the Society. Drs. Burge, Dickinson, Lewis, Pilcher, Matson, Read, West, Westbrook, Wild, Wright and others, will report cases. Report of two cases from Dr. Henry I. Bowditch, of Boston. It is expected that Dr. J. R. Leaming, of New York, will take part in the discussion. The President would be obliged to any members of the Society, who have records of such cases, if they will communicate with him, that they may be assigned a place on the programme, and announced on the card.

— MR. COURTNEY, M.P., ON SCIENCE.—Mr. Courtney, in presiding at the annual meeting of the Royal Cornwall Geological Society, at Penzance, on Friday, referred to the introduction of the electric telegraph and the invention of the steam engine, by which electricity and steam had been made our slaves in almost all the operations of life. No doubt, these were most remarkable applications, and we, in the present day, were greatly indebted to them, but at the same time he was bound to say that, in his opinion, we might overrate the debt. The conveyance of news by the telegraph was insignificant if the news itself were not of importance. As to the diminution of toil, which steam effected in supplying our wants, it depended very much on the use we made of it, and how far that did, or did not, confer a benefit on mankind. Was it a fact, that owing to the introduction of steam, the labor which was necessary for the subsistence of the multitude had been in any sense diminished, and the ragged edge of pauperism which surrounded the borders of society had in any sense disappeared? We might derive either of two advantages from the introduction of steam—we might either make life less toilsome while maintaining the mass of it as it was, or keep up the toil of life while increasing the mass, and he was afraid the result of the discovery of steam power had been an increase in the number of human beings rather than an improvement in the quality of life. He was, indeed, more disposed to reverence science for its educational, than for what he might call its economic advantages, for the way in which it elevated the mind of man, rather than for its ability to enable more men to live on the same low level on which men lived before, and it was because he believed in geology, and its kindred science, astronomy, as most powerful helps to the elevation

of the mind of man, that he was willing to pay his humble respects to those who prosecuted those particular sciences and conveyed to others their blessings.

—THE REGULAR MONTHLY MEETINGS of the Medical Society of the County of Kings are held at 8 P. M., on the third Tuesday of each month, at Everett Hall, 398 Fulton Street.

The February meeting will be held on the 20th. Subject for discussion : Chronic Pleurisy, Thoracentesis.

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King, J. S.	Ostrander, F. W.	Smith, J. E.
Knight, E. H.	Ostrander, G. A.	Smith, W. Scott.
Kortright, J. L.	Ostrander, J. W.	Snively, J. C.
Krauter, J.	Otterson, Andrew.	Sörensen, S. J.
Kretschmar, P. H.	Otterson, W. C.	Sparks, Agnes.
Kuhn, Geo. R.	Paine, A. R.	Speir, S. F.
Kuhn, L. de B.	Palmer, Ernest,	Spencer, W. E.
Lamadrid, J. J.	Peck, A. E.	Squibb, E. H.
Leary, J. B.	Peck, E. F.	Squibb, E. R.
Leighton, N. W.	Pendleton, E.	Sterling, J. H.
Lester, J. C.	Pilcher, L. S.	Stone, R. H.
Leuf, A. H. P.	Pillsbury, H. H.	Stuart, F. H.
Lewis, D. C.	Pillsbury, Harriett.	Stub, Arnold.
Lewis, E. A.	Platt, I. Hull	Sullivan, J. D.
Little, W. A.	Plympton, H.	Swalm, W. F.
Loewenstein, H.	Pratt, W. H. B.	Sweeney, James.
Lucas, D. F.	Prendergast, P. J.	Swift, William.
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Turner, J. M.
Van Brakle, James.
Vanderveer, J. R.
Van Duzee, T. A.
Van Harlingen, J.
Van Kleek, R. L.
Van Ness, John.
Van Zile, B. S.
Wackerhagen, G.
Wade, James D.
Walker, Jerome.
Wallace, William.
Waterworth, Wm.
Watt, James.

Drs. Wells, G. W.
Welton, R. B.
Welty, G. W.
West, F. E.
Westbrook, B. F.
Westbrook, G. R.
Whaley, E. A.
Wheeden, T. J.
Wheeler, E. A.
White, G. R.
White, H. B.
White, J. A.
Whiting, H.
Wieber, Geo.
Wight, J. S.

Drs. Wilbur, J. G.
Wilde, Thomas.
Williams, H. F.
Williams, Mary S.
Williams, W. H.
Willis, L. A.
Willson, J.
Wolff, A. J.
Woodhull, K. C.
Wunderlich, F. W.
Wyckoff, R. M.
Young, C. F.
Young, J. S.
Zabriskie, J. L.
Zellhoefer, C.

INDEX

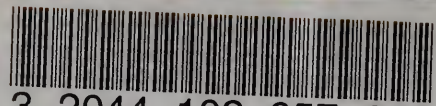
VOLUME VII.

MARCH, 1882, TO FEBRUARY, 1883.

Active List, Medical Society. County of Kings, 1883.....	279
Alkaloids, The New Cadaveric (Sizer)	41
Ammonia in Baking Powders	105
Amputation at the Knee-joint (Wight).....	214
Annual Mortality in Brooklyn, 1881 (Wyckoff)	93
Antiseptic Therapeutics (Bartley).....	184
Asphyxia Neonatorum	146
ATKINSON, Dr. G. H., Virus of the Chancroid.....	11
BARTLEY, Dr. E. H., Antiseptic Therapeutics	184
“ “ Rapid Methods of Testing Milk.....	73
Bites of Fleas, &c., Relief of.....	146
Burns, Treatment of... ..	177
Carbonic Acid, Anæsthetic Properties of.....	234
Carcinoma Hepatis (Leuf).....	131
“ of the Stomach.....	97
CHACE, Dr. D. E., Healthy Homes.....	27
“ “ Medical Legislation.	107
Chancroid, Virus of the (Atkinson).....	11
“ “ (Sturgis).....	8
“ “ (Westbrook)	11
“ “ (Wight).....	10
CLARKE, Dr. A. S., Laparo-Elytrotomy.....	164
Committee on Hygiene, Report of.	237
“ “ Obstetrics, Report of.....	163
“ “ Surgery, Report of	211
“ “ Therapeutics, Report of.	179
Constipation.....	208
Convulsions, Infantile.....	209
Cystitis in Women (Skene).....	182

Deformed Pelvis (Jewett).....	113
Diphtheria, Prevention of.....	102
Epididymitis	
Ergot, Parturient Dose of (Hutchins).....	194
Ether, Apparatus for Administering (Hutchison).....	91
FOWLER, Dr. G. R., Naphthalin as a Wound-dressing.....	218
GRAY, Dr. L. C., Hypnotism.....	59
“ “ Stretching of the Facial Nerve.....	127, 207
“ “ Spina Bifida.....	145
Healthy Homes (Chace)	27
Hernia, Reduction of (Wight).....	211
HORTON, Dr. A. F., Spina Bifida.....	147, 233
HUTCHINS, Dr. A., The Girtton Corset.....	160
“ “ The Parturient Dose of Ergot.....	194
HUTCHISON, Dr. J. C., Apparatus for Administering Ether.....	91
Hydrorrhagia (Gray).....	145
“ (Horton)	141
Hypnotism (Gray).....	59
Infantile Convulsions.	209
JEWETT, Dr. C. Delivery of Placenta.....	158
“ “ Labor in Deformed Pelvis	113
“ Laparo-Elytrotomy.	171
Knee-joint, Amputation at (Wight).....	214
Labor in Deformed Pelvis (Jewett)....	113
Laparo-Elytrotomy (Clarke)....	164
“ “ (Jewett)	171
“ “ (Skene)....	155
“ “ (Westbrook).....	160
LEUF, Dr. A. H. P., Carcinoma Hepatis.....	131
MATTISON, Dr. J. B., Opium Addiction	256
McCORKLE, Dr. J. A., Action and Therapy of Strychnia	179
Medical Charities and Medical Men (Segur).....	84
Medical Legislation (Chace).....	107
Minutes Medical Society, County of Kings, February meeting. 1882.....	13
“ “ “ March “ “	38
“ “ “ April “ “	71
“ “ “ May “ “	88
“ “ “ June “ “	99
“ “ “ July “ “	123
“ “ “ August “ “	144
“ “ “ September “ “	160
“ “ “ October “ “	174
“ “ “ November “ “	204
“ “ “ December “ “	237
“ “ “ January “ 1883.....	262
Milk Testing, Report, Methods for (Bartley).....	73
“ “ “ (Otterson).....	83
“ “ “ (Raymond)....	82
MILLS, Dr. G. A., Pericementitis.....	64

Napthalin as a Wound-dressing (Fowler)	218
Nerve Stretching (Gray).....	127, 207
Nitrite of Amyl, Hypodermically.....	123
Obituary Notes, Dr. Bremg.....	101
" " " F. V. Brush.....	124
" " " E. M. Carpenter.....	176
" " " D. A. Dodge.....	233
" " " G. Fletcher	89, 149
" " " F. Goodwin.....	176, 274
" " " H. J. Johnston.....	124
" " " A. L. Lowell.....	177
" " " T. L. Mason.....	103, 147
" " " C. H. Valentine.....	101
Opium Addiction (Mattison).....	256
OTTERTSON, DR. A., Household Sanitation.....	37
" " " Milk Testing.....	83
Our Drinking Water, (Sizer)	I
Ovariectomy, Essentials of Success in (Skene).....	222
Oysters, Digestibility of	234
Pericementitis (Mills).....	64
Phthisis. Treatment by Inhalation.....	103
Physicians and Household Sanitation (Otterson).....	37
" " " (Raymond).....	36
" " " (Segur).....	34
" " " (Walker).....	32
" " " (Wingate).....	17
Placenta, Delivery of (Jewett).....	158
Pneumonia, Treatment by Inhalation of Ether.....	177
Proliferations.....	14, 39, 72, 89, 101, 124, 146, 161, 176, 204, 232, 271
Pulvis Doveri.....	207
RAYMOND, DR. J. H. Household Sanitation.....	36
" " " Testing Milk.....	82
Red Stockings, Poisoning from.	234
Resorcine, Antiseptic Value of (Sizer)	237
Revaccination in London.....	102
Rheumatism, Acute, Fasting, &c.....	208
SEGUR, DR. B. A., Household Sanitation.....	34
" " " Medical Charities and Medical Men.....	84
SIZER, DR. A. B., Antiseptic Value of Resorcine.....	237
" " " Etiology of Uterine Disease.....	115
" " " The New Cadaveric Alkaloids.....	41
" " " Our Drinking Water	I
SKENE, DR. A. J. C., Cystitis in Women.....	152
" " " Essentials of Success in Ovariectomy.....	222
" " " Laparo-Elytrotomy.....	118
Spina Bifida (Gray)	145
" " " (Horton).....	141, 233
Strychnia, Action and Therapy of (McCorkle).....	179
Stung to Death.....	103
STURGIS, DR. F. R., Virus of the Chancroid.....	9
Uterine Disease, Etiology of (Sizer)	115
WALKER, DR. J., Household Sanitation.....	38
WESTBROOK, DR. B. F., Laparo-Elytrotomy.	165
" " " Virus of the Chancroid.....	11
WIGHT, DR. J. S., Amputation of the Knee-joint.	214
" " " Reduction of Hernia.....	211
" " " Virus of the Chancroid	10
WINGATE, C. F. Esq., Physicians and Household Sanitation	17
WYCKOFF, DR. R. M., Annual Mortality in Brooklyn in 1881.....	93



3 2044 102 957 040